

JANUARY 2003

FINAL

ENVIRONMENTAL ASSESSMENT FOR THE INSTALLATION AND OPERATION OF NINE REMOTE VIDEO SURVEILLANCE SYSTEMS IN THE TUCSON SECTOR COCHISE COUNTY, ARIZONA

FINDING OF NO SIGNIFICANT IMPACT FOR THE INSTALLATION AND OPERATION OF NINE REMOTE VIDEO SURVEILLANCE SYSTEMS IN THE TUCSON SECTOR COCHISE COUNTY, ARIZONA

PROJECT HISTORY: In the early 1990s, the U.S. Border Patrol (USBP), Tucson Sector began installing Remote Video Surveillance (RVS) systems in order to enhance their efforts in deterring undocumented aliens (UDA) and illegal drug smuggling within Cochise County. These RVS systems have proven to be an effective solution to reducing UDA traffic and illegal smuggling. Currently, the existing RVS systems do not provide adequate surveillance of the large expanses of desert in the Naco and Douglas Stations Areas of Operation (AO.) The proposed RVS systems would serve to provide a safe working environment for USBP agents, enhance detection capabilities, and facilitate apprehension of illegal entrants.

PURPOSE AND NEED: The purpose of the proposed RVS systems is to provide enhanced surveillance capabilities for the USBP Naco and Douglas Stations. The RVS systems are a passive, all weather monitoring system capable of providing 24-hour surveillance capabilities using day and night imagery. The RVS systems would allow the USBP to more effectively control a larger area (a force multiplier), improve response time, and secure the safety of Coronado National Memorial Park visitors, USBP agents, and even the UDAs attempting to illegally enter the U.S.

The RVS systems will increase UDA apprehension closer to the border. In turn, this results in a more compact enforcement patrol area and allows for relocation of USBP agents in a more effective manner. The operational effectiveness of the USBP is thus greatly enhanced by increasing their surveillance capability. The RVS systems would also minimize exposure of USBP agents to the elements and other dangerous conditions. The need for the proposed RVS systems is based upon illegal border activity and limited workforce available to the USBP.

PROPOSED ACTION: The Proposed Action is to install, operate and maintain nine RVS systems along the U.S.-Mexican border in Cochise County, Arizona in and between the Naco and Douglas USBP Stations. The Proposed Action Alternative includes permanent and temporary road improvements to allow access to the sites, and the installation of power lines from adjacent grids.

ALTERNATIVES: The No Action Alternative would preclude the installation and operation of the RVS systems. Under the No Action Alternative, the USBP would continue its current enforcement strategies with limited use of available technology. This alternative would greatly hinder the USBP's capability to detect illegal activity along the borders and their ability to fulfill their mission. Furthermore, UDAs and smugglers would circumvent areas where RVS systems are already in use and continue to degrade the border environments.

As the number of illegal entrants continues or increases, the USBP agents would be forced to increase the intensity of their efforts and enlarge the area they require for apprehension. As the entry attempts and the resultant enforcement activity increase, biological and cultural resources would be adversely impacted.

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The No Action Alternative would not provide continuous surveillance of the borders and would not minimize the exposure of USBP agents and UDAs to potentially dangerous conditions.

Other alternatives considered but eliminated from further consideration include an increased workforce alternative and an increased aerial reconnaissance/operations alternative.

ENVIRONMENTAL CONSEQUENCES: The effects of the Proposed Action Alternative include the permanent impact of 3.5 acres and temporary impacts to 6.7 acres of soils, vegetation, and wildlife habitat and their potential impacts to other resources. However, most of the proposed RVS systems are to be installed in previously disturbed areas, greatly reducing these impacts. The positive impacts expected to these same resources from the proposed RVS systems are anticipated to outweigh these losses. For example, reduced UDA traffic would allow vegetation to return to previously denuded areas, providing additional wildlife habitat.

ENVIRONMENTAL DESIGN MEASURES: Environmental design measures for the proposed action will be managed by the USBP Stations in Douglas and Naco and will be provided by International Microwave Corporation (IMC)) in the design and build phases. These design measures include:

- Best Management Practices (BMPs) used to minimize the potential for erosion and sedimentation and control of fugitive dust during construction. All construction equipment and vehicles would be required to be kept in good operating condition to minimize noise and exhaust emissions. Because of the increased noise sensitivity during quiet hours, time limits on on-site construction activities are warranted for use of heavy equipment. On-site activities would be restricted to daylight hours on Monday through Saturday.
- The installation contractor (IMC) will minimize ground disturbance when possible.
 However, when disturbance is unavoidable, IMC will revegetate with native species
 in order to decrease the potential of promoting the establishment and spread of
 invasive species.
- 3. Construction techniques to reduce the potential for soil erosion and subsequent sedimentation in water resources would include installing culverts, and the suspension of construction activities during rain events. All work would stop during heavy rain and would not resume until conditions are suitable for movement of equipment and material.

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- 4. The proposed RVS sites within Coronado National Memorial could detract from the visual experience of visitors to the park. In order to minimize visual impacts, the following measures will be implemented for the Montezuma Ranch sites. RVS poles will be painted a flat earth tone such as medium dark gray or tan/sandy brown. No white, black, or dark colors would be used on the poles. Fencing around the poles will be galvanized or treated with a non-toxic agent to allow for the natural weathering of the fence. This will eliminate the reflective tendency of new chain link fence material. The entire footing of the pole will be recessed at least 2 inches below grade. This will allow the cement footer to be covered by local earth materials. No crushed rock will be used within the fenced area or other disturbed areas around the pole. Site access will be along existing roads that will be re-graded were needed to return them to preconstruction conditions. If permitted by the local utility company, electrical lines will be run underground where practical on National Park Service property. If buried electrical lines are not possible, the poles used will be of similar size and type as exist on the site. New areas of disturbance around the buried line/poles will be reclaimed by backfilling with excavated earth and excess material will be evenly spread over the surface area of the disturbance. The disturbed area will be hand raked to remove all piles of plant debris, and to reestablish the existing surface contours. Revegetation with native species will be done in disturbed area where practical. The USBP would continue ongoing coordination with the NPS regarding aesthetic design of the RVS pole at the Montezuma Ranch location in compliance with the NPS General Management Plan.
- 5. All required Section 106 compliance procedures would be completed prior to initiating construction activities.

FINDING: Based upon the results of the EA and the environmental design measures managed by INS USBP Station Managers at both Naco and Douglas Stations and, the installation contractor (IMC) and incorporated as part of the Proposed Action, it has been concluded that the Proposed Action would not have a significant effect on the environment. Therefore, no further environmental impact analysis is warranted.

Kenneth R. Ehinger, Director

Headquarters, Facilities and Engineering Division

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ENVIRONMENTAL ASSESSMENT FOR THE INSTALLATION AND OPERATION OF NINE REMOTE VIDEO SURVEILLANCE SYSTEMS IN THE TUCSON SECTOR, COCHISE COUNTY, ARIZONA

Technical Directive #107

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Environmental Assessment

For the Installation and Operation of Nine Remote Video Surveillance Systems in the Tucson Sector, Cochise County, Arizona

Public Comment

If you wish to comment on the environmental assessment, you may mail comments to the name and address below. Please note that names and addresses of people who comment become part of the public record. We will make all submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

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Abstract

PROPOSED ACTION:	The H O Investmention and Nature II. (I. O. i. (INO)
THOI COLD ACTION.	The U.S. Immigration and Naturalization Service (INS) proposes to install and operate nine Remote Video Surveillance (RVS) systems for the Naco and Douglas U.S. Border Patrol (USBP) Stations. The proposed action includes related permanent road improvements, temporary road improvements, and the installation of powerlines from adjacent power grids.
PURPOSE AND NEED FOR THE PROPOSED ACTION:	The purpose of the proposed RVS systems is to aide the USBP in the detection of illegal activity along the U.S. borders by providing 24-hour surveillance. The RVS is a passive all weather monitoring system which provides continuous electronic surveillance using day and night imagery. The need for the proposed RVS systems is based upon continuing illegal alien activity and limited agents available to the USBP.
PROPOSED ACTION AND ALTERNATIVES:	The Proposed Action Alternative includes the installation, operation and maintenance of nine RVS systems with the associated construction. Other alternatives analyzed in the EA include the No Action Alternative, which would preclude the installation of the proposed RVS systems. Alternatives considered but eliminated from further consideration include an increased USBP agent alternative and an increased aerial reconnaissance/operations alternative.
ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION:	The proposed action would involve minimal construction activities at the proposed RVS sites. All of the access road construction would involve grading of existing roadways and previously disturbed areas.
	Both RVS tower locations and roadways were surveyed for sensitive biological and cultural resources. No significant adverse effects to air quality, water quality, protected species, land use, archeological or ethnographic resources are expected.
	Short-term, adverse impacts to surface water quality are anticipated from grading activities in the ephemeral drainages, in association with access road improvements at the North of Monument 90 site.

Naco/Douglas RVS EA Final i

CONCLUSIONS:

The proposed crossings of Waters of the U.S. at the North of Monument 90 site would be permitted under Nationwide Permit (NWP) 14. Applicable NWP 14 and Section 401 permit procedures and coordination with the U.S. Army Corps of Engineers, Los Angeles District and the Arizona Department of Environmental Quality shall be completed prior to initiation of construction activities at the North of Monument 90 site.

Cultural resource surveys of these sites and associated powerline rights-of-way and concurrence from the Arizona State Historic Preservation Office would also be necessary, prior to any construction activities, for completion of the Section 106 process.

No major, long-term, adverse impacts are anticipated to any resource analyzed within this document. Therefore, no further analysis or documentation (*i.e.*, Environmental Impact Statement) is warranted. The U.S. Immigration and Naturalization Service, in implementing this decision, would employ all practical means to minimize the potential adverse impacts on the local environment.

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APPENDIXES

Appendix A Common Wildlife in the Project Area

Appendix B Correspondence

LIST OF ACRONYMS

ADEQ Arizona Department of Environmental Quality

AGFD Arizona Game and Fish Department

BLM Bureau of Land Management BMPs Best Management Practices

CWA Clean Water Act

EA Environmental Assessment

EPA Environmental Protection Agency

INS Immigration and Naturalization Service

JTF-6 Joint Task Force Six

NAAQS National Ambient Air Quality Standards
NEPA National Environmental Policy Act of 1969

NPS National Park Service

NRHP National Register of Historic Places

ROW Rights-of-way

RVS Remote Video Surveillance

UDA Undocumented Alien

USACE U.S. Army Corps of Engineers

USBP U.S. Border Patrol USFS U.S. Forest Service

USFWS U.S. Fish and Wildlife Service

SECTION 1.0 INTRODUCTION AND PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) addresses the potential effects, beneficial and adverse, of the proposed installation and operation of nine Remote Video Surveillance (RVS) systems near Naco and Douglas, Cochise County, Arizona (Figure 1-1). The U.S. Immigration and Naturalization Service (INS) and U.S. Border Patrol (USBP) Tucson Sector propose to install the RVS systems at specific strategic locations along the U.S.-Mexico border to enhance their capabilities of deterring and detecting illegal entries into the United States (U.S.) and to assist in the apprehensions of those illegal entrants who are detected. RVS systems are a component of the overall strategy to control illegal entry into the U.S. The National Park Service (NPS), Coronado National Memorial has requested to be a cooperating agency because potential locations for RVS system installation are located on Coronado National Memorial.

This EA is tiered from four documents: the 2001 Supplemental Programmatic Environmental Impact Statement (INS 2001a) that addressed INS and Joint Task Force-Six (JTF-6) activities along the U.S.-Mexico Border; the Final Environmental Assessment for Infrastructure within U.S. Border Patrol Naco-Douglas Corridor, Cochise County, Arizona (INS 2000a); the EA for JTF-6 Proposed Fence and Road Improvement Project Douglas, Cochise County, Arizona (USACE 2000a); and the EA for INS Proposed Fence and Road Improvement Project, Naco, Cochise County, Arizona (USACE 2000b). Site-specific surveys were performed at each of the proposed RVS locations for sensitive biological and cultural resources.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality Regulations for the Implementation of the NEPA, as well as the INS's Procedures for Implementing NEPA (28 CFR 61).

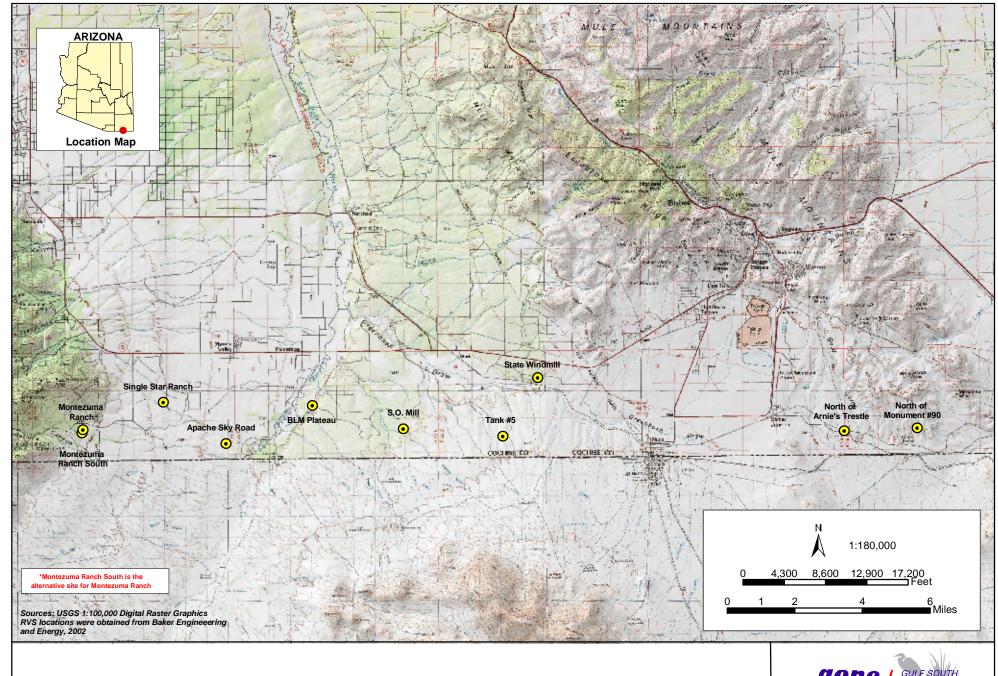


Figure 1-1: Project Area



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1.2 PURPOSE

The purpose of the proposed action is to provide enhanced electronic RVS capabilities for the USBP Douglas and Naco Stations. The RVS system, a passive all weather monitoring system, is capable of providing continuous electronic surveillance 24-hour surveillance using day and night imagery. RVS systems would allow the USBP to more effectively control a larger area (a force multiplier), improve response time, and secure the safety of park visitors, USBP agents, and UDAs attempting to illegally enter the U.S. The RVS systems would allow the USBP to apprehend illegal entrants in proximity of the border thereby resulting in a more compact enforcement area to patrol and allow for relocation of USBP agents as necessary. The operational effectiveness of the USBP would be greatly enhanced by increasing their surveillance capability once the RVS systems are installed. The RVS systems would also minimize exposure of USBP agents to the elements and unknown and potentially dangerous condition.

1.3 NEED

The need for the proposed RVS systems is based upon illegal border activity and limited workforce available to the USBP. The U.S. experiences a substantial influx of illegal immigrants and drugs each year. Both of these illegal activities cost the American citizens billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs and increased insurance costs. In fiscal year 2001, the Naco and Douglas Stations apprehended 260,939 UDAs and seized more than 46,517 pounds of narcotics. Still, the U.S. is also experiencing epidemic levels of drug use and drug-related crimes as reported by the Office of National Drug Control Policy (2002):

- Illegal drugs cost our society approximately \$160 billion annually
- 1.5 million Americans were arrested in 2000 for violating drug laws
- Americans spend \$65 billion dollars on illicit drugs in 1999
- 50-80 percent of arrestees in major cities test positive for drugs at time of arrest
- 2.8 million Americans are "dependent" on illegal drugs and an additional 1.5 million are "abusers" of illegal drugs
- 3.2 million Americans were casual cocaine users in 1999
- Prison populations (drug-related crimes) doubled between 1989 and 2000

The proposed RVS systems would provide a force multiplier to the USBP enforcement strategy. The USBP is constantly shifting personnel and resources between areas of high intensity illegal traffic. For example, in the mid 1990s agents were sent to San Diego to assist in Operation Gatekeeper and in 1999 agents were reassigned to the Tucson Sector because of increases in illegal traffic in this area.

Since the September 11, 2001 terrorist attack on the U.S., the INS and USBP have been identified as playing a key role in combating the threat of terrorism. This increased role requires more vigilance at the Ports-of-Entry and along the entire length of the U.S. borders; consequently, a number of USBP agents have been reassigned to the northern border of the U.S. The ability of the USBP to insure the integrity and security of our borders is an essential part of the effort to prevent terrorism. The forward deployment of technology in RVS systems would enhance the USBP's capabilities in the campaign to stop terrorist acts. Also, RVS systems can reduce the number of agents on temporary duty status and return them to perform other duties in areas currently lacking sufficient agents.

The UDAs passing through the border areas also threaten public lands, historical structures, endangered species, and other sensitive resources. Dealing with the detrimental effects of UDAs is becoming an ever-increasing burden on Federal and State land managers, private landowners, as well as the USBP. UDAs have trampled vegetation, created trails, and left litter throughout the Naco and Douglas stations. Vehicles used by smugglers are also abandoned in national parks and other natural and sensitive areas (INS 2002a).

The INS is committed under the Illegal Immigration Reform and Immigrant Responsibility Act of 1996. Title 1, Subtitle A, Section 102 of the Act states that, the Attorney General, in consultation with the Commissioner of Immigration and Naturalization, shall take such actions as may be necessary to install additional physical barriers, roads and other infrastructure deemed necessary in the vicinity of the U.S. borders to deter illegal crossings in areas of high entry into the U.S.

1.4 APPLICABLE ENVIRONMENTAL STATUES AND REGULATIONS

This EA is being prepared by the INS/USBP, in accordance with, but not limited to the NEPA; Endangered Species Act of 1973, as amended; the National Historical Preservation Act of 1966, as amended; the Archeological and Historical Preservation Act of 1974, as amended; Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment"; Executive Order No. 11988, "Floodplain Management"; Executive Order No. 11990, "Protection of Wetlands"; Executive Order No. 13007, "Indian Sacred Sites"; Executive Order No. 13045, "Protection of Children from Environmental Health Risks"; Executive Order No. 12898 "Federal Actions to Address Environmental Justice"; 1916 Organic Act; National Park System General Authorities Act of 1970; Act to Provide for the establishment of the Coronado National Memorial in the State of Arizona, 1941 (55 Stat. 630), and as amended July 9, 1952 (66 Stat. 510); "Redwood amendment", and the Redwood National Park Expansion Act, 1978 (PL95-250). Table 1-1 summarizes the pertinent environmental requirements that guided the development of this EA.

Table 1-1
Applicable Environmental Statutes and Regulations

Federal Statutes				
Archeological and Historical Preservation Act of 1974				
Clean Air Act of 1955, as amended				
Clean Water Act of 1977, as amended				
Endangered Species Act of 1973, as amended				
Migratory Bird Treaty Act of 1972				
National Historic Preservation Act of 1966, as amended				
National Environmental Policy Act of 1969, as amended				
Watershed Protection and Flood Prevention Act of 1954				
Wild and Scenic Rivers Act of 1968, as amended				
Farmland Protection Policy Act of 1980				
Native American Graves Protection and Repatriation Act of 1990				
Executive Orders, Memorandums, etc.				
Floodplain Management (Executive Order 11988) of 1977				
Protection of Wetlands (Executive Order 11990) of 1977				
Federal Actions to Address Environmental Justice to Minority Populations and Low-Income				
Populations (Executive Order 12898) of 1994				
Protection of Children from Environmental Health Risks (Executive Order 13045) of 1997				
Protection of Migratory Birds & Game Mammals (Executive Order 11629) of 2001				
Indian Sacred Sites (Executive Order 13007) of 1996				
Consultation and Coordination with Indian Tribal Governments (Executive Order 13175) of 2000				
Government-to-Government Relations with Native American Tribal Governments (Presidential				
Memorandum) of 1994				

1.5 ISSUE TOPICS DISMISSED FROM FURTHER CONSIDERATION

Issues and topics of concerns associated with this project were identified by INS and NPS specialists, as well as from other Federal, state, and local agencies. The rationale for dismissing specific topics from further consideration is given below.

1.5.1 Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality directed that Federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland are defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resource Conservation Service, the only prime farmlands in the area are located in the San Pedro Valley outside of the project area. These prime farmlands are classified as category one which means that they require irrigation to be arable, and thus are not considered unique because they require irrigation to be arable (INS 2000a). Since there are no prime or unique farmlands in the project area this topic was dismissed as an impact topic in this document.

1.5.2 Socioeconomic Environment

The Proposed Action Alternative would neither change local or regional land use nor impact local businesses or other agencies. The proposed RVS systems are located in remote locations on remote border roads not commonly accessed by the public. The roadway to the RVS site and alternate location located on Coronado National Memorial is closed to vehicle traffic. Park visitors would continue to be able to access the site on foot; therefore, the Proposed Action Alternative would have negligible impacts upon park visitation. The remaining sites are located away from communities or houses and are not commonly accessed by the public. Implementation of the Proposed Action Alternative could provide a negligible beneficial impact to the economies of the nearby communities, e.g., negligible increases in revenues for local businesses and government generated from construction activities and workers. The labor for this alternative would be provided by private contractors from outside the region, resulting in temporary, negligible increases in the population of the project area. Any increase, however,

would be temporary and negligible, lasting only as long as construction. Therefore, socioeconomic environment was dismissed as an impact topic.

1.5.3 Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The Proposed Action Alternative would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's (EPA) Environmental Justice Guidance (EPA 1998).

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks," requires each Federal Agency "to identify and assess environmental health risks and safety risks that may disproportionately affect children; and "ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." This Executive Order was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The Proposed Action Alternative would not result in disproportionately high or adverse environmental health or safety impacts to children. Therefore, environmental justice and protection of children was dismissed as an impact topic in this document.

1.5.4 Hazardous Materials & Human Health and Safety

The EPA in 1996 listed approximately 15,000 uncontrolled hazardous waste sites in the U.S.. The majority of the uncontrolled hazardous waste sites are waste storage/treatment facilities or former industrial manufacturing sites. The chemical contaminants released into the environment (air, soil or groundwater) from uncontrolled waste sites may include heavy metals, organic compounds including solvents and other chemicals. The potential adverse human health impact of hazardous waste sites is a considerable source of concern to the general public as well as government agencies and health professionals.

Potential effects are precluded by the fact that the Proposed Action Alternative does not involve any activities, excluding refueling of vehicles, that would affect handling or disposal of hazardous materials or hazardous waste. Due to the short construction periods necessary for RVS systems, refueling of vehicles is not anticipated; however, if necessary, the handling of fuels for refueling of equipment would occur at construction storage or staging sites that would be located at least 0.25 miles from wildlife and livestock tanks or other water bodies to reduce potential effects of accidental spills. Due to the remote, undeveloped nature of the border area, encountering hazardous materials during construction is unlikely. Additionally, the only earthwork required during construction of RVS towers would consist of site grading and the drilling of pole/tower foundations. There are no other potential impacts in relation to human health and safety; therefore, this resource is dismissed from further discussion.

1.5.5 Geologic Resources (Geologic Resources, Aquifers, Seismicity)

According to the NPS's Management Policies (2001), the NPS will preserve and protect geologic resources as integral components of park natural systems and will strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources. This includes a mandate to maintain and restore the integrity of existing geologic resources and assess the impacts of natural processes and human-related events on geologic resources. The Proposed Action Alternative involves minor construction activities that would have a negligible effect on the local geology and have no effect on aquifers including recharge zones, or seismicity, and thus will not be discussed further.

Construction activities including the foundation for the RVS systems and access roads would require the removal or disturbance of soils. For this reason, soils will be addressed as an impacted resource.

SECTION 2.0 PROPOSED ACTION AND ALTERNATIVES

Each alternative, as well as the No-Action Alternative, has been evaluated using the objectives of the project, with respect to associated environmental consequences. Operational criteria, in general, include important design, location, or construction features that may affect the degree to which the Proposed Action Alternative can satisfy the project needs and objectives. Operational criteria relevant to the needs and objectives of the Proposed Action, include:

- Provide continuous surveillance;
- Facilitate rapid response time to operational and emergency situations;
- Minimize exposure of USBP agents to the elements and unknown and potentially dangerous conditions;
- Maximize use of existing USBP agent workforce;
- Enhance the USBP's capabilities in the campaign to stop terrorist acts that threaten the country's national security;
- Enhance the ability of the USBP to detect and apprehend illegal entrants in proximity of the border and therefore result in less trans-border traffic and fewer enforcement actions outside the immediate border vicinity.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the USBP would continue its current enforcement strategies with limited use of available technology. This alternative would not allow for the installation of RVS systems. Even though this alternative would reduce unavoidable impacts and irretrievable losses of resources, it would greatly hinder the USBP's capability to detect illegal activity along the borders and their ability to fulfill their mission. Furthermore, illegal entries into the U.S. would continue at current levels or possibly increase. UDAs and smugglers would circumvent areas where RVS systems are already in use and continue to degrade the border environments. As the number of illegal entrants continue or increase, the USBP agents would be forced to increase the intensity of their efforts and enlarge the area they require for apprehending them. As the entry attempts and enforcement activities increase, biological and cultural resources would continue to be adversely impacted throughout the border regions.

The No Action Alternative would not provide continuous surveillance of the borders and would not minimize the exposure of USBP agents and UDAs to potentially dangerous conditions. The alternative to technological aids in the detection process involves stationing USBP agents at observation points to detect illegal activity along the border. Limiting the use of technology in the detection process (i.e., RVS systems) does not maximize the use of existing USBP agents. This alternative does not facilitate rapid response time because USBP command centers would not have access to the real-time video provided by RVS systems and would therefore have a limited understanding of the current situation in the field. Without the aid of the real-time video provided by RVS systems, USBP command centers must rely on radio communications to dispatch USBP agents, apprehend illegal entrants, or deter illegal activities.

Many of the areas along the borders have been damaged by illegal activities. Footpaths and trails have been trampled throughout sensitive areas along the borders. Many footpaths are so heavily used that the resulting soil erosion has changed the look of the border regions. Throughout the project area, trash left behind from UDAs litters many of the arroyos, waterways, national parks and monuments, and conservation areas in the project area (INS 2002a). The No Action Alternative would allow this pattern to continue and result in continued and increased degradation of the region.

2.2 PROPOSED ACTION

The Proposed Action is to install, operate and maintain nine RVS systems along the U.S.-Mexican border in Cochise County, Arizona (see Figure 1-1). The Proposed Action Alternative includes permanent and temporary road improvements to allow access to the sites, and the installation of power lines from adjacent grids. Table 2-1 shows the location, construction footprint, and design information for the nine proposed locations and one alternate location. The Montezuma Ranch South site is an alternative location for the Montezuma Ranch site and would only be installed if the Montezuma Ranch site were not selected.

Table 2-1. Location, Construction Footprint, and Design of Potential RVS Sites.

			l la imbt	Dawar		Impac	ts	
Site Name	Latitude	Longitude	Height (ft)	Power Source	Landowner	Impact Type	Permanent ft ²	Temporary ft ²
State Windmill	31 22 05	110 00 13	80	AC**	State of	Pole	900	-
					Arizona	Powerline (2,625 ft. X 100 ft.)=	_	262,500
Tank #5	31 20 33	110 01 19	60	Solar	State of	Pole	2,500	-
Tank #5	012000	110 01 13	- 00	Oolai	Arizona	-	-	-
S.O. Mill	31 20 46	110 04 18	60	Solar	Private	Pole	2,500	-
O.O. IVIIII	31 20 40	110 04 10		Oolai	Tilvate	-	-	-
BLM Plateau	31 21 22	110 07 00	60	Solar	BLM	Pole	2,500	
	012122	110 07 00	00	Oolai	DLIVI	Road –temporary fill	0	0
Apache Sky	31 20 23	110 09 38	120	AC**	Private	Tower	10,000	-
Road	012020	110 00 00	120			Road (315 ft. X 14 ft.)=	4,410	-
Single Star	31 21 29	110 11 27	60	Solar	Private	Pole	2,500	-
Ranch	012120	110 11 27		Oolai		Road (5,280 ft. X 14 ft.)=	73,920	-
Montezuma	31 20 49	110 13 53	60 or	AC**	National Park	Pole	900	-
Ranch*	012040	110 10 00	80		Service	Powerline (200 ft. X 100 ft.)=	-	20,000
Montezuma	31 20 44	100 13 56	60 or	AC**	National Park	Pole	900	-
Ranch South*	31 20 44	100 10 00	80	7.0	Service	Powerline (110 ft. X 100 ft.)=	_	11,000
North of	31 20 40	109 48 51	60	Solar	State of	Pole	2,500	-
Monument #90	31 20 40	109 70 31	00	Joiai	Arizona	Road (3,447 ft. X 14 ft.)=	48,258	-
North of Arnie's	31 20 38	109 51 03	80-	AC**	Private	Pole	2,500	-
Trestle	31 20 30	109 51 05	00-	7.0	riivale	-	-	-
TOTAL IMPACTS	3						3.5 acres	6.7 acres

^{*} Montezuma Ranch site would only be installed if the Montezuma Ranch South site was not selected.

$$ft = feet$$
 $ft^2 = square feet$

^{**} Alternating Current (AC) supplied from local power grid through either aerial or underground lines

The general locations of the RVS sites were determined based upon the known presence of illegal entry and activities, the amount of time normally required to respond to the area, and the juxtaposition with existing systems to ensure that optimum surveillance capabilities would be provided. Site-specific locations were selected based upon proximity to existing roads and power sources, ability to obtain lease or right-of-entry, and topography. The following criteria were considered in the evaluation of the RVS sites and determination of viable locations:

- a) Tactical Relevance (a location that provides the best video coverage)
- b) Technical Capacity (the ability to relay a video signal)
- c) Power Source Accessibility/Site Access
- d) Aesthetics/Visual Impact
- e) Ground Disturbance (of the area where the RVS site is to be located)
- f) Public Opinion
- g) Land Ownership
- h) Presence of Archeological and Cultural Resources
- i) Presence of Threatened and Endangered Species
- j) Cost

Potential locations on NPS and Bureau of Land Management (BLM) properties were coordinated with staff from these agencies to select sites that minimize potential impacts. Many locations were evaluated during the planning process; however, because these nine proposed RVS sites and the single alternate site best fit the above criteria, no alternative locations will be assessed in this EA. Many locations were dismissed because of issues encountered with one or more of the criteria stated above.

2.2.1 Description of Standard Design for RVS Poles and Towers

Eight of the proposed RVS systems would be pole-mounted units while the Apache Sky Road site would be a 3-legged, steel tower. The Apache Sky Road site would serve both as a RVS system and a relay station for transmissions from other RVS sites. The standard designs for a

RVS pole and tower are given in the following paragraphs; however, final design may vary slightly.

Power to the RVS systems are generally supplied via aerial lines from adjacent grids. Impacts from powerline Rights-Of-Way (ROW) are anticipated to be temporary as equipment may have to transverse these areas during power pole and powerline installation. Permanent impacts would result from power pole placement (approximately every 100 ft. in the ROW) within a 3-ft. diameter location. Given the longest power ROW anticipated (2,625 feet), installation of poles every 100 ft. would alter only 238 square feet (ft²). This amount of impacts is within the worst-case impacts provided for the RVS pole/tower site. Powerline ROWs were surveyed for sensitive biological and cultural resources in anticipation of power pole installation. Therefore, the installation of power poles will not be discussed further. When power is supplied via aerial lines no solar panels or backup power generators are necessary. The installation of a RVS site generally requires less than two weeks and maintenance for RVS systems would be conducted once per month with a standard 4WD pickup for transporting equipment. Once illegal traffic is detected, response by USBP is highly variable and dependant upon a wide range of variables (e.g., number of UDAs, potential for illegal entrants to be smugglers, available USBP personnel, location).

2.2.2 Standard RVS Pole Design

The standard design for pole mounted RVS systems would consist of two cameras (a color and an infrared) and microwave transmitters to send the signals back to the USBP Stations. A typical pole mounted RVS system is shown in the picture to the right. This equipment would be mounted approximately 60-80 feet (ft.) above ground level, depending upon the local terrain. The RVS equipment is mounted on a rectangular or triangular platform that holds the microwave and antennae systems, cameras mounted on pan-and-tilt pedestals, and control equipment. The exact number and types of equipment depend on the number and types of cameras used, area to be monitored, UDA traffic, and other design variables. In addition, one or more

small solid parabolic antenna are mounted on the platform railings or on a separate antenna mount. The platform would be mounted on a tapered steel pole that is approximately three feet in diameter. Typical pole placement is on a foundation that requires a 4-ft. diameter by 24-ft.

deep hole drilled by an auger, but the design is dependent upon subterranean characteristics determined by subsurface investigations. Concrete is placed in the hole and around the pole forming a foundation to anchor the pole in the ground. Typical RVS pole design requires 900 ft² or 2,500 ft² (30 ft X 30 ft or 50 ft X 50 ft, respectively) at each site depending on power source. Power to the RVS poles are generally supplied via aerial lines from adjacent grids. An 8-foot chain link fence is placed around the sites to prohibit access, preventing theft and vandalism. Depending on the location, small generators (propane), equipped with back up batteries, are used to provide back up power for the solar powered systems. These backup generators and batteries are not required for RVS systems utilizing power from adjacent electrical grids, such as the Montezuma Ranch sites. RVS systems which utilize solar power require a larger area for installation of the solar panels and associated equipment (2,500 ft²). RVS systems are generally painted with colors that allow the RVS systems to blend into the surrounding landscape. Maintenance for RVS systems would be conducted once per month and would require a standard 4WD pickup for equipment.

2.2.3 Standard RVS Tower Design

The design for the Apache Sky site would be a steel, 3-legged tower (120 ft. high). The cameras would be installed at a height that would ensure a satisfactory view and provide a clear pathway for transmission of information to relay stations and/or the USBP station. Three circular concrete pilings, approximately three feet in diameter, would be poured at each site to anchor the tower legs in the ground. The tower and associated facilities would disturb an area up to 10,000 ft²



(100 ft X 100 ft). Crushed stone would be placed where there is no concrete and an 8-foot chain link fence would be used to enclose the area. Power to the RVS equipment would be supplied via aerial lines from the adjacent electrical grid to a secondary or service pole installed at this location. As required by the local utility, power would be extended from the service or secondary pole to the RVS tower utilizing underground conduit. An example of a tower mounted RVS system is shown in the drawing to the left.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

2.3.1 Increased Workforce Alternative

Another alternative that was considered during the preparation of this EA was to increase the workforce at the Naco and Douglas Stations and thereby increasing patrol efforts as an alternative to RVS systems. The sites selected for RVS installation are considered high intensity areas for illegal entries; thus, an alternative to the RVS system would be to station additional USBP agents at each of these sites to observe activities and detect any potential illegal entry efforts. USBP agents would have to be stationed at these sites 24 hours per day, seven days a week, and due to local topography and vegetation would not provide the same level of detection capabilities as the RVS systems. Consequently, additional observation points would have to be established to provide the same coverage as the proposed RVS systems, which would disturb additional areas along the border. Such efforts would require an enormous commitment of resources and would demand an increase of about 54 agents per 8-hour shift (assuming it would require approximately six agents to monitor and area equal to that which one RVS system can monitor) to obtain an equal level of effectiveness as the proposed RVS systems. These agents would be assigned to these observation points and would provide minimal additional strength to the station's apprehension capabilities. In addition, the purchase of large amounts of equipment would be necessary due to the fact that USBP agents and/or their vehicles would have to be equipped with infrared cameras or spotting scopes to allow night observations, or portable or permanent lights would need to be installed to aid in detection.

Due to the increased USBP agent needs and additional equipment required to meet the same level of detection, this alternative was not considered viable because it does not meet the operational criteria identified for the Proposed Action Alternative. The additional staff would not provide additional flexibility in the station's enforcement strategy.

2.3.2 Increased Aerial Reconnaissance/Operations

Under this alternative, increased aerial reconnaissance would involve the use of helicopters and fixed-wing aircraft for surveillance in support of the Naco and Douglas Stations. Under this alternative, INS would use fixed-wing aircraft and helicopters to perform reconnaissance and detection operations as well as to support ground patrols.

This alterative was eliminated from further consideration because it does not satisfy the purpose and need of the project. The purpose and need calls for a 24-hour, all weather system for detection of illegal activities. Aerial reconnaissance/operations require highly skilled pilots, cannot be used on a 24-hour per day basis, and cannot operate under all weather conditions. Aerial reconnaissance/operations also have limited detection capabilities in areas such as deep ravines, at nighttime, and in thick vegetation.

Aerial reconnaissance/operations are also limited over or near military installations, national parks and monuments, wilderness areas, and near commercial airports. The Federal Aviation Administration and/or the Department of Defense impose flight restrictions on USBP operations on missions over or near their facilities. Aerial reconnaissance/operations have also restricted flight patterns near endangered species or other sensitive wildlife habitats, at nighttime, and over Indian reservations or other sacred cultural sites. This alternative was also considered undesirable, as the increased aircraft noise would detract from the visitor's experience to Coronado National Memorial.

This alternative does not provide an adequate alternative to the Proposed Action Alternative and does not meet the operational criteria identified for the Proposed Action Alternative. Aerial reconnaissance/operations have proven to be an effective border enforcement strategy in some regions of the border. For example, aerial operations have proven highly effective in areas where the open terrain, low growing vegetation, and sandy soils allow UDAs and signs of other illegal border traffic to be easily recognized from aircraft. Additionally, aerial reconnaissance/operations have become invaluable to USBP agents for performing search and rescue missions and during vehicle pursuits. Due to their effectiveness in given situations and specific areas of the border, increasing aerial reconnaissance/operations may be an effective solution in given areas or to meet the purpose and need of other INS activities.

2.4 ENVIRONMENTALLY PREFERRED ALTERNATIVE

Environmentally preferable is defined as "the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act's §101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances

historic, cultural, and natural resources" ("Forty Most Asked Questions Concerning Council on Environmental Quality's National Environmental Policy Act Regulations," [Council on Environmental Quality 1981]).

Section 101 of the National Environmental Policy Act states that "... it is the continuing responsibility of the Federal Government to... (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." The environmentally preferable alternative for the installation of RVS systems is based on these national environmental policy goals.

The No Action Alternative represents the continued enforcement of the border under traditional activities without the use of technology in RVS systems. Although the No Action Alternative would not have any direct impacts on the environment, this alternative would not result in the same level of protection of natural resources within the project area as would occur under the action alternatives. Indirect impacts from continued and possibly increased illegal foot and vehicle traffic would continue to degrade natural resources in direct opposition to the goals set forth by NEPA.

The Proposed Action Alternative promotes the most comprehensive protection and enhancement of natural resources in the project area. This alternative emphasizes protection and enhancement of natural resources through the use of technology in RVS systems. The Proposed Action Alternative attempts to provide maximum resource protection in that RVS systems provide a non-intrusive means for monitoring illegal activities along the border while reducing the footprint of traditional activities such as patrols. RVS systems would help to reduce

the footprint of enforcement actions and does not restrict the visitor experience to Coronado National Memorial or other natural areas in the project area.

The Increased Aerial Reconnaissance/Operations Alternative creates undesirable consequences in that the residents of the small communities in the project area and visitors to Coronado National Memorial would be subjected to increased noise from additional patrol flights.

2.5 SUMMARIES

Two alternatives will be carried forward for analysis. Table 2-2 presents a summary matrix of the selection criteria for each of the alternatives and how the alternatives satisfy these criteria. Table 2-3 presents a summary comparison of alternatives and impacts. The following is a summary of each of the alternatives and their potential for impacts:

2.5.1 No Action Alternative

Under the No Action Alternative, the USBP would continue its current enforcement strategy with limited use of available technology. Illegal entrants would be less likely to be detected and apprehended. USBP agents and illegal entrants would continue to be exposed to potentially dangerous situations. Continuous surveillance of the border would be limited by the number of USBP agents and adverse weather conditions. Efforts to protect biological and cultural resources would be less effective or futile without the detection and deterrence capabilities of the RVS systems. The No Action Alternative would allow the continued degradation of the border environment resulting in increased illegal foot and vehicle traffic. Increases in this traffic would result in additional impacts to the physical, biological, and natural resources in the project areas.

Table 2-2 Summary Comparison of Purpose and Need to Alternatives

	Alternatives			
Purpose and Need Criteria	No Action	Proposed Action	Increased Workforce	Increased Aerial Reconnaissance /Operations
Provide 24-hour surveillance detection capabilities in compliance with the Illegal Immigration Reform and Immigrant Responsibility Act of 1996	NO	YES	NO	NO
Provide for a more compact enforcement area to patrol, allowing for a greater agent presence	NO	YES	NO	PARTIAL
Minimize exposure of USBP agents to the elements and unknown and potentially dangerous conditions encountered during apprehensions	NO	YES	NO	PARTIAL
Facilitate rapid response time to operational and emergency situations	NO	YES	YES	NO
Maximize use of existing USBP agent workforce	NO	YES	NO	NO
Enhance the ability of the USBP to detect and apprehend illegal entrants in proximity of the border and therefore result in less trans-border traffic and fewer enforcement actions outside the immediate border vicinity	NO	YES	NO	PARTIAL
Enhance the USBP's capabilities in the campaign to stop terrorist acts that threaten the country's national security	NO	YES	PARTIAL	NO

 Table 2-3: Summary Comparison of Alternatives and Impacts

	No Action	Proposed Action	
Soils	The continuation of illegal traffic and consequent enforcement activities has the potential of adversely impacting soils in the project area.	Approximately 3.5 acres would be permanently impacted and 6.7 acres of soils would be temporarily impacted.	
Vegetation	There would be increased traffic in the area, which would increase disturbance or loss of vegetation as UDAs continue to use existing trails and create new ones. Subsequent increases in enforcement actions would increase disturbance or loss of vegetation as additional roads and off-road pursuits increase.	There would be a disturbance or loss of approximate 3.5 acres of vegetation at the proposed tower locations and for the new roads; however, sparse vegetation and the use of previously disturbed areas would reduce impacts to vegetation. Approximately 6.7 acres would be temporarily impacted during installation of power lines.	
Wildlife	Synergistic impacts to wildlife from the trampling of vegetation and accidental wildfires as illegal traffic continues or possibly increases.	Disturbance and temporary displacement of local wildlife during construction. Loss of habitat for some smaller animals. After construction, reduced illegal traffic and enforcement actions would benefit all wildlife species.	
Threatened/Endangered Species	No direct impacts to protected species or critical habitats would occur under this alternative. Indirect impacts would occur from illegal traffic trampling vegetation and threatened and endangered plant species and disturbing threatened and endangered animals.	No direct adverse effects to threatened or endangered species. Indirect benefits would be expected as the RVS systems reduce illegal traffic in the area indirectly reducing impacts on protected species and critical habitats like trampling of vegetation and threatened and endangered plant species, and disturbing threatened and endangered animals.	
Water Resources	No impacts to water quality or wetlands are expected.	Short-term adverse impacts to surface water quality from the grading of the ephemeral drainages associated with road improvements at the North of Monument 90 site. Applicable permits and coordination with the USACE and ADEQ under NWP 14 would be required before construction is initiated.	

	No Action	Proposed Action		
Air Quality	Negligible amounts of additional fugitive dust and vehicle emissions to local air quality.	Negligible amounts of additional fugitive dust and vehicle emissions would be contributed to local air quality during construction. Decreased frequency of vehicle trips to these areas would decrease the long term contribution of fugitive dust and vehicle emissions from vehicle traffic.		
Noise	No increases or decreases in ambient noise levels	Noise would temporarily increase during construction.		
Archeological Resources	Increased impacts to archeological resources from more frequent vehicle trips and enforcement action in the area as illegal traffic increases.	No archeological sites were recorded during the field surveys conducted at the proposed sites. As a result no archeological resources are anticipated to be adversely impacted. Increased surveillance of the area is expected to decrease impacts to both known and unknown sites in the area from reduced foot and vehicle traffic and from UDAs.		
Ethnographic Resources	Increased impacts to ethnographic resources could result as illegal traffic continues throughout the area unabated.	No impacts to ethnographic resources are expected as no ethnographic resources were identified during consultation with the Native American Tribes.		
Historic Resources	Increased impacts to historic resources from illegal traffic and subsequent increases in vehicle trips and enforcement actions become necessary. Visual impacts can also be expected as UDAs traveling through the area leave trash and other modern debris on the landscape.	Under the Proposed Alternative no impacts are anticipated to historic properties at the Montezuma Ranch location. Montezuma Ranch, though a component landscape of the Coronado National Memorial parent landscape, has been determined not eligible for listing on the NRHP as a historical landscape due to the overall lack of integrity of the site and is not considered a historic property. The placement of poles at either of the Montezuma Ranch sites would result in No Historic Properties Affected. The cultural landscape for Montezuma Ranch will be maintained to the greatest extent possible.		

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	No Action	Proposed Action
Historic Resources continued		The structure located at the North of Monument 90 site is considered ineligible for inclusion to the NRHP. As a result, no cultural resources are anticipated to be adversely impacted by the implementation of the Proposed Action.
Aesthetics	Under the No Action Alternative further degradation of aesthetics would occur due to human disturbances. Illegal traffic would continue to create paths and trails that would detract from local aesthetics.	No further degradation of aesthetics would occur due to the previously disturbed nature of the sites. The proposed RVS systems could detract from the visual experience of visitors to the area. The proposed RVS systems would provide positive beneficial impacts by reducing illegal traffics and trails in the project area.

2.5.2 Proposed Action Alternative

The Proposed Action Alternative would significantly reduce the illegal vehicle and foot traffic along the borders thereby protecting physical and biological resources. The forward deployment of RVS systems would aid the USBP in apprehending UDAs and drug smugglers while providing deterrence to these illegal activities. The Proposed Action Alternative would enhance the capability of the USBP to detect illegal activities resulting in a reduced enforcement footprint. Additionally, the forward deployment of technology in RVS systems would enhance the USBP's capabilities in the campaign to stop terrorist acts and assist the USBP in combating the threat of terrorism. The effects of the Proposed Action Alternative include the permanent impact of 3.5 acres and temporary impacts to 6.7 acres of soils, vegetation, and wildlife habitat and their potential impacts to other resources. However, most of the footprints of the proposed RVS systems are located in previously disturbed areas, greatly reducing these direct, physical impacts. Minor impacts to the greater viewshed and the historic landscape are anticipated from the placement of RVS towers. Positive impacts expected to these same resources from the proposed RVS systems. For example, reduced UDA traffic would allow vegetation to return to previously denuded areas, providing additional wildlife habitat.

The environmentally preferable alternative is the Proposed Action Alternative because it surpasses the other alternatives in realizing the *full range* of national environmental policy goals as stated in §101 of the National Environmental Policy Act. It also provides greater levels of protection for cultural resources, natural resources, and/or visitor experiences. The Proposed Action does (1) provide a high level of protection of natural and cultural resources while concurrently attaining the widest range of neutral and beneficial uses of the environment without degradation; (2) maintain an environment that supports diversity and variety of individual choice; and, (3) integrate resource protection with an appropriate range of visitor uses.

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SECTION 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES Much of the information contained in this EA was taken from the EA for Infrastructure within USBP Naco-Douglas Corridor, Cochise County, Arizona (INS 2000a) and the EA for JTF-6 Proposed Fence and Road Improvement Project, Naco, Cochise County, Arizona (USACE 2000b). Information has been updated where appropriate.

3.1 NATURAL RESOURCES

The following terms will be used throughout the natural and cultural resources section to define the intensity of effects. The definitions are as follows:

Negligible –An action that would cause disturbances so small or localized that it would have no measurable or perceptible consequence that are barely perceptible and not measurable.

Minor - An action that is measurable or perceptible, but it is slight and localized within a relatively small area. For natural resources, the impact would be limited to relatively few individuals of the populations, be very localized in area, and have barely perceptible consequences to populations or natural system function. In respect to cultural resources, the impact does not affect the character defining features of a National Register of Historic Places eligible or listed archeological site and would not have a permanent effect on the integrity of any archeological sites.

Moderate - An action that would cause measurable affects on: (1) a relatively moderate number of individuals within a species population, (2) the existing dynamics between multiple species (e.g. predator-prey, herbivore-forage, vegetation structure-wildlife breeding habitat), (3) a relatively large habitat area or important habitat attributes, or (4) a large area of the natural physical environment within the project area. A species population, plant and animal communities, habitats, or natural system function might deviate from normal levels under existing conditions, but all species would remain indefinitely viable within the area. The impact

changes one or more character defining feature(s) of a cultural resource but does not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.

Major - An action that would have drastic consequences for species population numbers, dynamics between multiple species, habitat area or important habitat attributes, or the existing physical environment within the project area. The change would be readily apparent throughout the project area. A species population, plant and animal communities, habitats, or natural system function would be permanently altered from normal levels under existing conditions, and species would likely be extirpated within the area.

The impact on cultural resources is substantial, noticeable, and permanent. For a National Register eligible or listed archeological sites, the impact changes a character defining features (s) of an archeological resource, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the National Register.

3.1.1 Affected Environment

3.1.1.1 Wildlife

The native fauna of southeastern Arizona, which encompasses Cochise County, include approximately 370 bird species, 109 mammals, 23 amphibians, and 72 reptiles. The bird population is dominated by sparrows and towhees (35 species); wood warblers (32 species); swans, geese, and ducks (31 species); tyrant flycatchers (30 species); and sandpipers and phalaropes (26 species). Bird species diversity is highest in the spring and fall when neotropical migrants (i.e., flycatchers and warblers) pass through on their way to summer breeding or wintering grounds, and in the winter when summer resident birds (i.e., robins, kinglets, and sparrows) from the northern U.S. and Canada arrive to winter in the area. The majority of the mammal species found in the area are bats and rodents (i.e., mice, rats and, ground squirrels). Rodents, such as pocket mice and kangaroo rats, are the most commonly encountered.

Of the 23 amphibian species that inhabit southeastern Arizona, spadefoot toads and true toads are dominant and the most widespread. Iguanid lizards, colubrid snakes, and whiptails are the

most common reptiles in the area. There are no water bodies on or near the proposed RVS sites that could support aquatic resources. The types of wildlife commonly occurring in Cochise County are listed in Appendix A (INS 2000a). More information on fauna within the project area can be found in the EA for JTF-6 Proposed Fence and Road Improvement Project Douglas, Cochise County, Arizona (USACE 2000a).

3.1.1.2 Vegetation

The Apachian biotic province runs west from the New Mexico-Arizona state line through a large portion of Cochise County, Santa Cruz County, and parts of Pima County (Dice 1943). The province covers the grassy high plains and mountains of southeastern Arizona and consists of plant species adapted to semiarid conditions. There are six major vegetation communities in Arizona; however, only four (i.e., forest, woodland, grassland, and desert scrub) are located within Cochise County (Brown 1982; Brown and Lowe 1983). The three vegetation communities occurring at the proposed RVS sites are discussed in the following paragraphs.

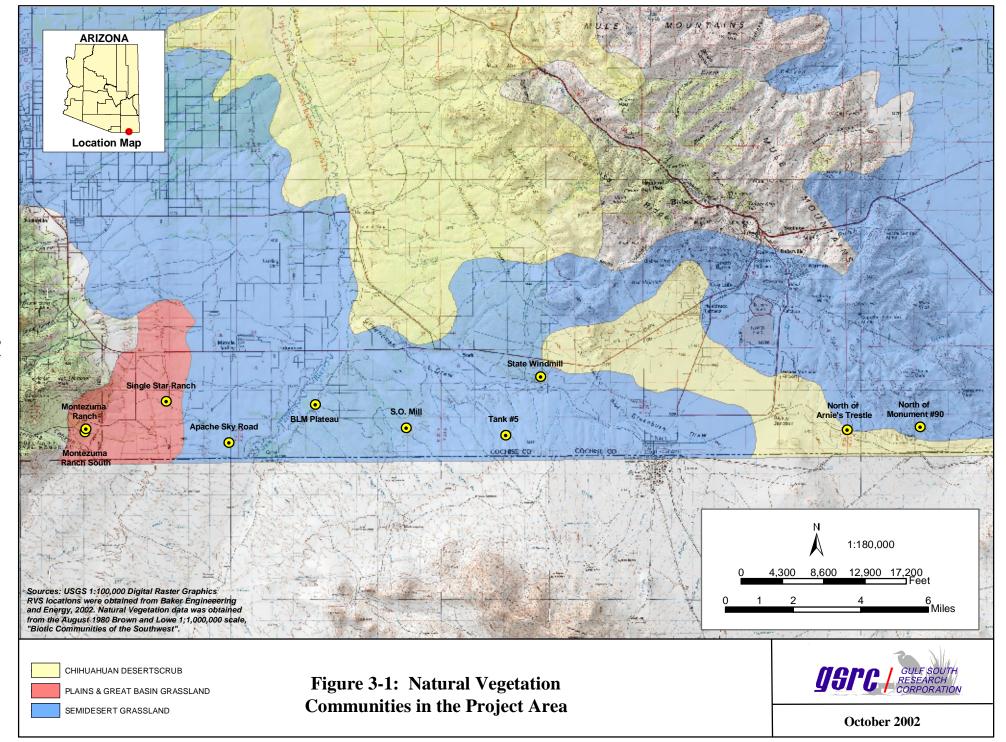
Semi-desert Grassland

The Semi-desert Grassland is found in the valley areas of Cochise and eastern Pima counties. This vegetation is dominated by grama grasses (*Bouteloua* spp.), tobosa grass (*Hilaria mutica*), curly mesquite (*Hilaria belangeri*), sacaton (*Sporobolus wrightii*), and scrub-shrubs such as honey mesquite (*Prosopis glandulosa*), one-seed juniper (*Juniperus monosperma*), littleleaf sumac (*Rhus microphylla*), and desert hackberry (*Celtis pallida*).

Six sites, North of Monument 90, State Mill, Tank #5, SO Mill, BLM Plateau and Apache Sky Road, are located within this vegetation community (Figure 3-1).

Plains and Great Basin Grassland

The Plains and Great Basin Grassland community is located between 4,000 and 7,500 feet in elevation. Dominant species include grama grasses, buffalo grass (*Buchloe dactyloides*), Indian rice grass (*Oryzopsis hymenoides*), galleta grass (*Hilaria jamesii*), prairie junegrass (*Koeleria cristata*), plains lovegrass (*Eragrostis intermedia*), vine mesquite (*Panicum obtusum*), wolftail (*Lycurus phleoides*), and alkali sacaton (*Sporobolus airoides*). Shrubs such as four-wing saltbush (*Atriplex canescens*), sagebrush (*Artemisia* sp.), and snakeweed (*Gutierrezia* spp.) are often scattered throughout.



Three sites, Single Star Ranch, Montezuma Ranch and Montezuma Ranch South, are located within the Plains and Great Basin Grassland community (See Figure 3-1).

Chihuahuan Desert Scrub

Within Arizona, Chihuahuan Desert Scrub is present only in Cochise and eastern Pima counties. Dominant species include creosote bush (*Larrea tridentata*), tarbush (*Flourensia cernua*), whitethorn acacia (*Acacia neovernicosa*), ocotillo (*Fouquieria splendens*), and honey mesquite.

One site, North of Arnie's Trestle, is located within this vegetation community (see Figure 3-1).

3.1.1.3 Remote Video Surveillance Site Descriptions

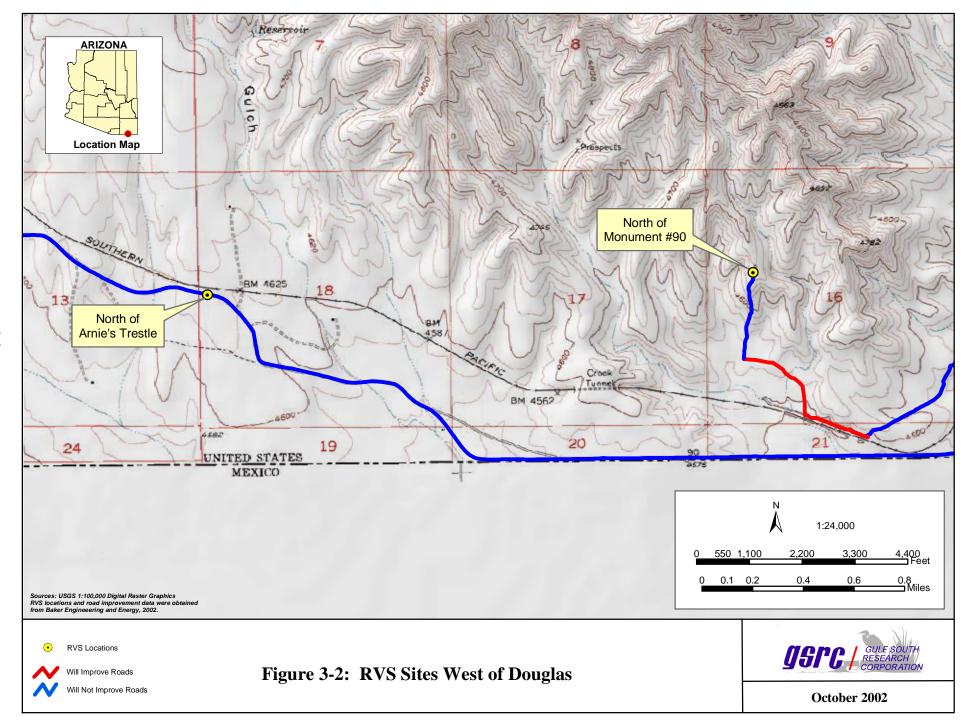
The proposed RVS sites are located within Cochise County near the cities of Douglas and Naco, Arizona. Surveys were conducted at the proposed RVS locations to ascertain the existing conditions at each site during the week of March 18, 2002. Although biologists collected data regarding general wildlife and vegetation, they focused their efforts on protected species. No Federal or state listed species were observed at any of the proposed sites. Site specific descriptions of the sites, based on these surveys, are provided in the following paragraphs. Existing roads access the sites unless otherwise noted in the following descriptions.

North of Monument #90

This site is owned by the State of Arizona and shown in Figure 3-2. Common plants found at the proposed site are mesquite (*Prosopis velutina*), mariola (*Parthenium incanum*), and lovegrass (*Eragrostis sp.*) (Photo 1). Specimens of Palmer's agave (*Agave palmeri*) were also noted on this site. This location requires the upgrade of an existing



Photograph 1. North of Monument #90 RVS



two track road. Road improvements at this location would require grading of approximately 1.1 acres (3447 ft. by 14 ft.), which has been previously disturbed, to allow construction equipment to access the site.

North of Arnie's Trestle

The site is located on private land between an existing border road and a railroad (Photo 2, See Figure 3-2). Dominant vegetation found at the site included whitethorn acacia (Acacia constricta), desert zinnia (Zinnia acerosa), and oreganillo (Aloysia wrightii).



Photograph 2. North of Arnie's Trestle RVS

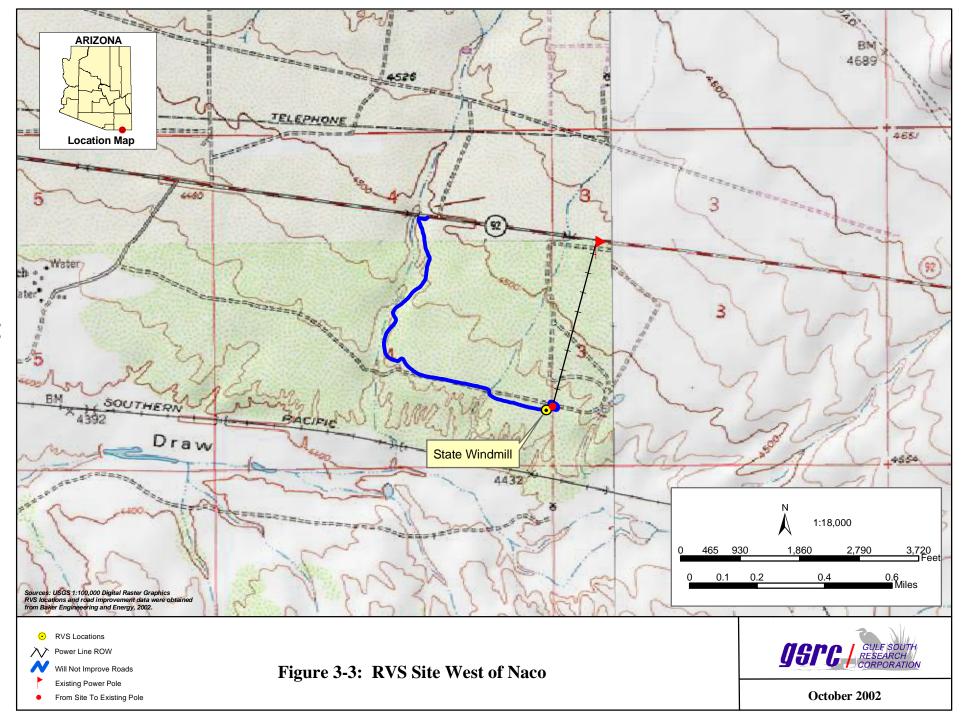
State Windmill

The proposed RVS site is located 0.5 mile south of Highway 92 on State of Arizona land (Figure 3-3). The current area has been previously disturbed due to heavy grazing (Photo 3).



Photograph 3. State Windmill RVS Site

Creosotebush, peppergrass (*Lepidium* sp.), and dropseeds (*Sporobolus* sp.) were the predominant vegetation observed at this site. This site would require the installation of overhead electric power lines from Highway 92 south to the proposed location (approximately 0.5 miles).



Tank #5

This site is located approximately 0.5 miles north of the international border and is owned by the State of Arizona (Figure 3-4). This site has been recently cleared of vegetation and is currently used as pasture (Photo 4). Fairyduster (Calliandra eriophylla) and various grasses (Sporobulus sp., Hilaria sp.) were seen at this site in minimal amounts scattered across the site.



Photograph 4. Tank #5 RVS Site



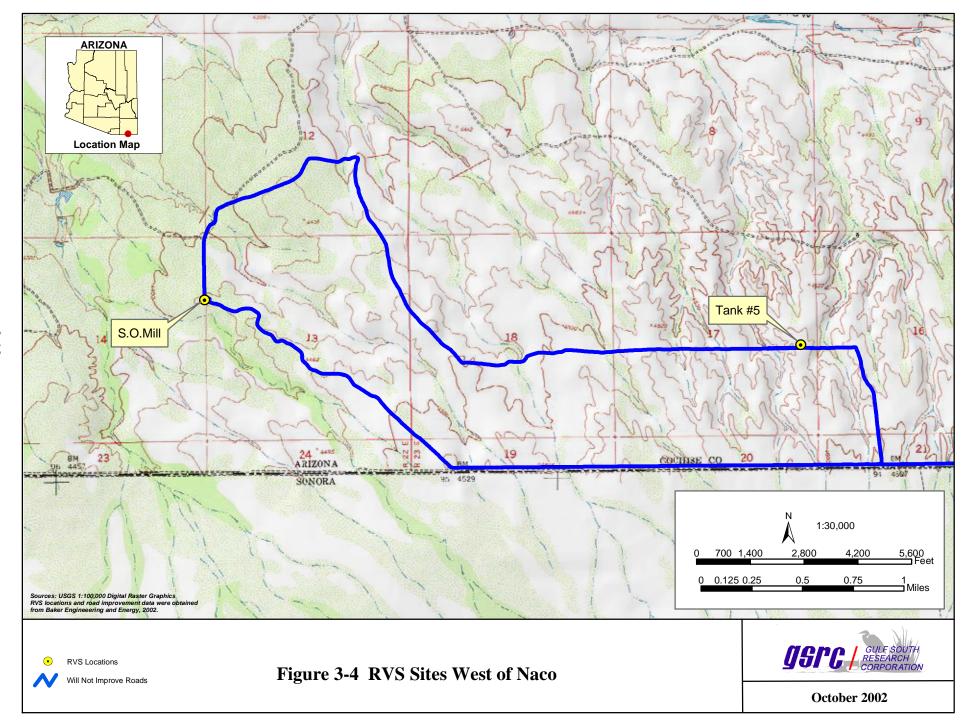
Photograph 5. S.O. Mill RVS Site

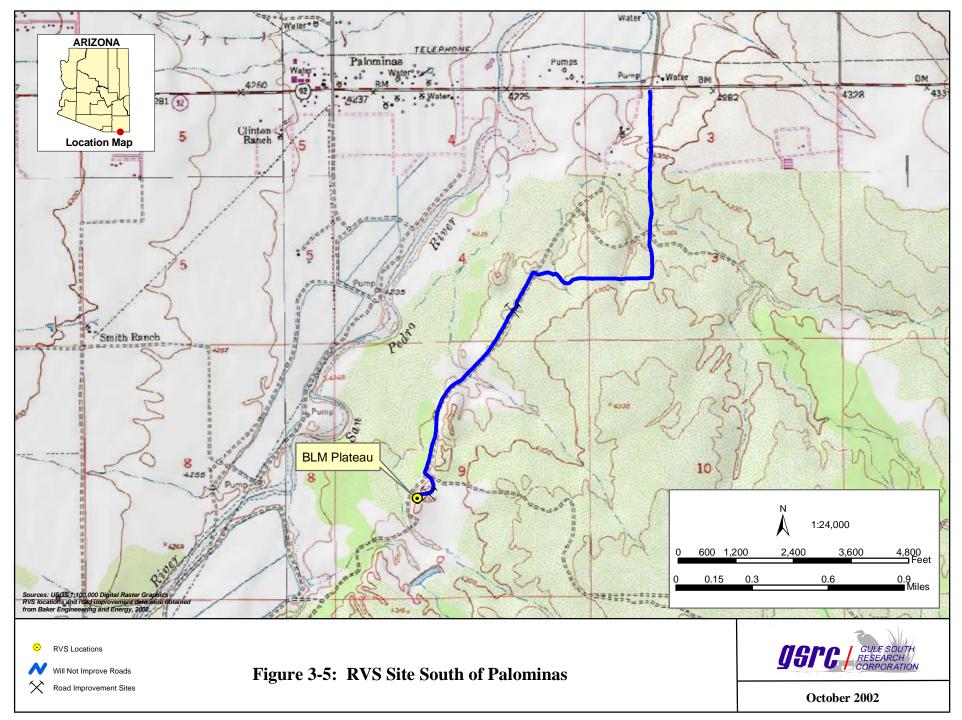
BLM Plateau

The proposed RVS site is located approximately 0.75 miles north of the international border and is owned by BLM (Figure 3-5). Vehicle traffic has disturbed portions of the site (Photo 6). Vegetation on the site consists of whitethorn acacia, burroweed (*Isocoma tenuisecta*), spiny aster



Photograph 6. BLM Plateau RVS Site





(*Machaeranthera tagetina*), Yerba-de-Pasmo (Baccharis ramulosa), and brittlegrass (*Setaria* sp.). Two washed out areas along the existing road would be temporarily filled with gravel during construction; however, these areas would be returned to pre-project conditions after construction is complete.

Apache Sky Road

Apache Sky Road site is located on the east side of Apache Sky Road (Figure 3-6). This site consists of mesquite, three-awn grass (*Aristida* sp.), and spiny aster (Photo 7). This site is currently used for livestock grazing. Approximately 315 ft. by 14 ft. (0.1 acres) of the existing road would be graded to allow access to the site.



Photograph 7. Apache Sky Road RVS Site

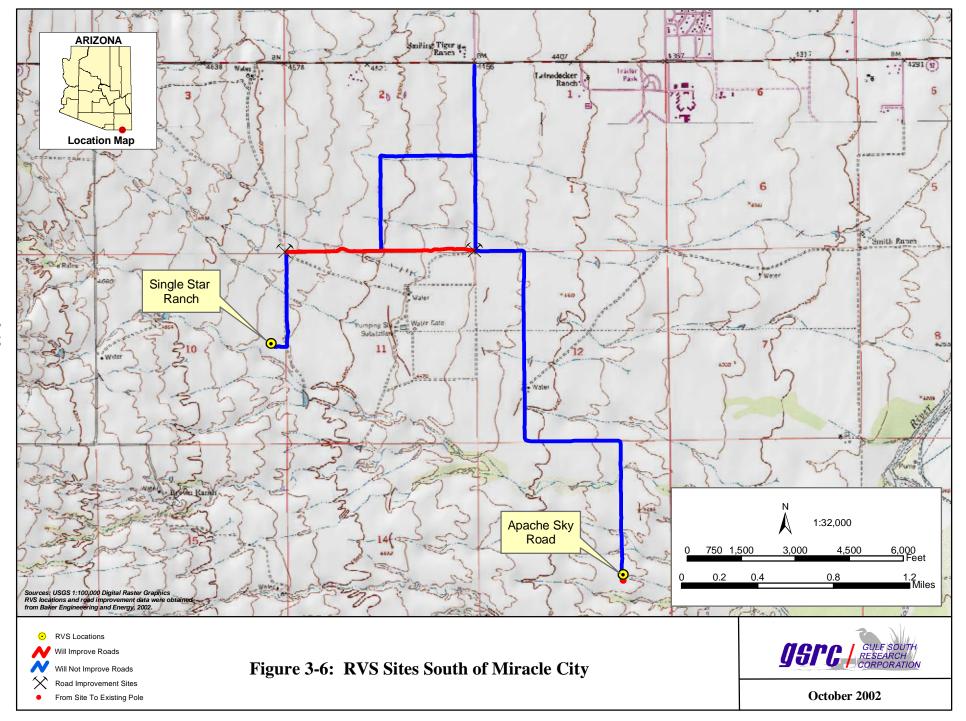
Single Star Ranch

This site is located approximately 1.6 miles north of the international border on private land (Figure 3-6). Dominant vegetation included three-awn grass and soaptree yucca (*Yucca elata*)



Photograph 8. Single Star Ranch RVS Site

(Photo 8). Road improvements to access the site include grading and widening of approximately 1.0 mile of existing roadway (1.7 acres); however, this section of the road has been previously disturbed from prior grading activities.



Montezuma Ranch

The proposed RVS site is located adjacent to the Montezuma Ranch complex, which is owned by the National Park Service within Coronado National Memorial (Figure 3-7). Vegetation consisted of desert broom (*Baccharis sarothroides*), and lovegrass (Photo 9). Removal of several Italian cypress (*Cupressus sempervirens*) may be required at this



Photograph 9. Montezuma Ranch RVS Site

location to permit adequate views of the surrounding area. Removal of any vegetation at this location would be coordinated with the NPS.

Montezuma Ranch South



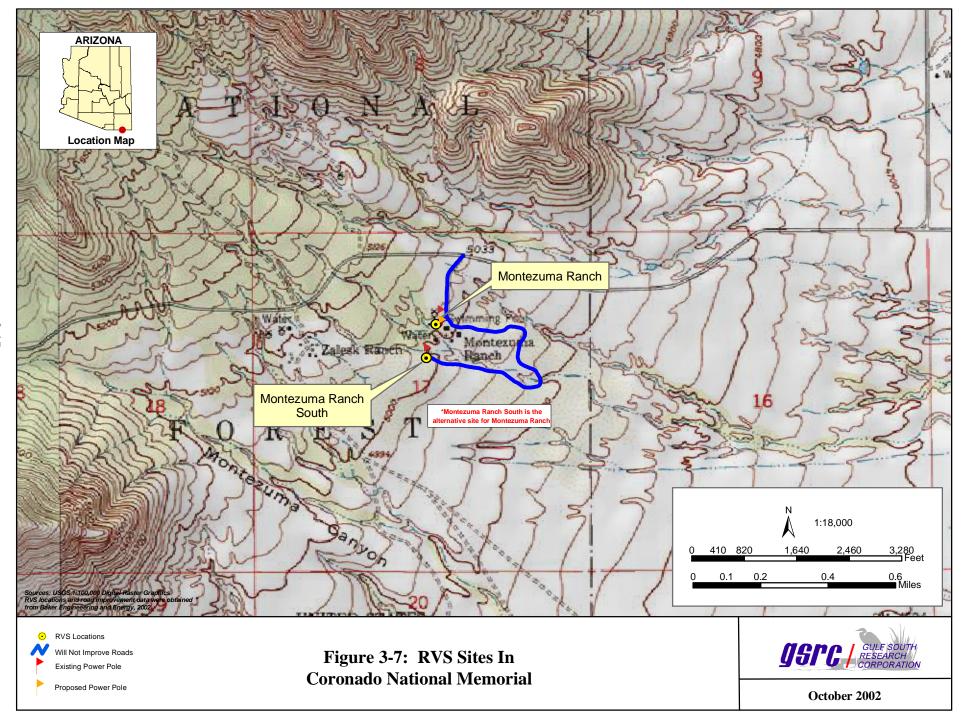
Photograph 10. Montezuma Ranch South RVS Site

This alternate site is located 0.1 miles southwest of Montezuma Ranch complex and is also owned by the National Park Service (Figure 3-7). This location is located approximately 500 feet southwest of the Montezuma Ranch site. The Montezuma Ranch South site is an alternate location to the Montezuma Ranch site and would only be installed if the Montezuma Ranch site

were not chosen. This site was dominated by lovegrass (Photo 10).

3.1.2 Impacts of the No Action Alternative

The No Action Alternative would not allow the installation of the nine RVS systems and the USBP would not be as effective in detecting and apprehending illegal entrants and foot traffic. Illegal activity along the borders would continue at its current levels or even potentially increase.



This illegal traffic damages vegetation communities and thereby causes synergistic impacts to wildlife from the trampling of vegetation and accidental wildfires (INS 2002a).

3.1.3 Impacts of the Proposed Action Alternative

Installation of the RVS systems and associated roads would have a minor impact on vegetation and wildlife habitat. Approximately 3.5 acres of vegetation and wildlife habitat would be impacted under the Proposed Action Alternative. An additional 6.7 acres would be temporarily impacted during installation of power lines but would return to natural conditions upon completion of construction. Very little vegetation would be damaged at the proposed locations; in fact, most were lacking mature vegetation, due to past and on-going human disturbances. Several non-native Italian cypress (*Cupressus sempervirens*) would be removed at the Montezuma Ranch site which is part of the Montezuma Ranch cultural landscape. The Montezuma Ranch cultural landscape has been determined to have a low integrity and ineligible for listing on the National Register as a historic landscape (see section 3.10.2.1). As a result there would be negligible impacts to the historic landscape from their removal. None of the proposed RVS sites contained undisturbed natural vegetation communities. Due to the limited size of the area required for each system and the presence of similar habitat in the surrounding areas, impacts to vegetation communities would be minor.

Impacts to existing vegetation during construction activities would be minimized through avoidance. Additional mitigation measures include best management practices during construction to minimize or prevent erosion and soil loss, which could negatively impact vegetation communities.

Limited wildlife habitat exists on the site; therefore, only limited numbers of wildlife occur within the project area. Consequently, negligible impacts to wildlife populations are anticipated. Some losses of individual specimens, particularly fossorial or sedentary species, might occur as a result of direct contact with construction equipment and vehicles. No water bodies exist on or near the proposed RVS sites; therefore, there would be no impacts to aquatic resources.

To comply with Executive Order 13112 Invasive Species (64 Federal Register 6183, February 8, 1999), INS would minimize ground disturbance when possible. However, when disturbance is

unavoidable, INS would revegetate with native species in order to decrease the potential of promoting the establishment and spread of invasive species.

Once the RVS systems are installed, the operation and maintenance of the systems would have no adverse effect on the region's vegetation or wildlife. The proposed RVS systems would serve to protect vegetation and wildlife in the project area through a reduction in illegal traffic to the area.

3.2 PROTECTED SPIECES AND CRITICAL HABITATS

3.2.1 Affected Environment

The Endangered Species Act [16 U.S.C. 1531 et. seq.] of 1973, as amended, was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All Federal agencies are required to implement protection programs for designated species and to use their authorities to further the purposes of the act. Responsibility for the identification of a threatened or endangered species and development of any potential recovery plan lies with the Secretary of the Interior and the Secretary of Commerce.

The USFWS is the primary agency responsible for implementing the Endangered Species Act, and is responsible for birds and other terrestrial and freshwater species. The USFWS responsibilities under the Endangered Species Act include: (1) the identification of threatened and endangered species; (2) the identification of critical habitats for listed species; (3) implementation of research on, and recovery efforts for, these species; and (4) consultation with other Federal agencies concerning measures to avoid harm to listed species.

An endangered species is a species in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are those that have been formally submitted to Congress for official listing as threatened or endangered. Species may be considered endangered or threatened when any of the five following criteria occurs: (1) current/imminent destruction, modification, or curtailment of their habitat or range; (2) overuse of the species for commercial, recreational, scientific, or

educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors affect continued existence.

In addition, the USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which the USFWS has sufficient information to support proposals to list as endangered or threatened under the Endangered Species Act. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

3.2.1.1 Federal

A total of 27 Federally endangered, threatened, proposed threatened and candidate species occur within Cochise County, Arizona (USFWS 2002). A total of 14 species are listed as endangered, nine as threatened, one as proposed threatened and three as candidate (Table 3-1).

No evidence of Federally listed threatened or endangered species were found within the specific project sites during the site visit in March 2002, or during past surveys in the project area (INS 2001a, 2001b, 1993; USACE 1996, 1994).

One ocelot (*Leopardus pardalis*) sighting was reported in the last two years in Mexico near Douglas, Arizona. The Arizona Game and Fish Department (AGFD) recently photographed the endangered jaguar (*Panthera onca*) west of Nogales, Arizona; this jaguar is the first photographed in six years in North America (Dye 2002). Until the December 2001 photograph, the last confirmed sighting of the jaguar was in 1996 near the Baboquivari Mountains, approximately 100 miles to the west of the project corridor in Pima County, Arizona. According to the AGFD there are no recorded sightings of jaguarundi (*Herpailurus yagouaroundi cacomitli*) in or near the project area in recent years (AGFD 2001). There have been confirmed sightings of the jaguar in the region (AGFD 2001; Tewes 2001).

The range of the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) is from "southern Arizona and extreme southwestern New Mexico, through western Mexico, and south

Table 3-1
Federally Listed, Proposed, and Candidate Species Potentially Occurring
within Cochise County, Arizona

within Cochise County, Arizona			
Common/Scientific Name	Status	Date Listed	Habitat
PLANTS			
Canelo Hills ladies'-tresses Spiranthes delitescens	Е	1/6/97	Finely grained, highly organic, saturated soils of cienegas
Cochise pincushion cactus Coryphantha robbinsorum	Т	1/9/86	Semidesert grassland with small shrubs, agave, other cacti, and grama grass
Huachuca water umbel Lilaeopsis schaffneriana ssp. Recurva	Е	1/6/97	Cienegas, perennial low gradient streams, wetlands
BIRDS			
Bald eagle Haliaeetus leucocephalus	Т	1/12/95	Large trees or cliffs near water with abundant prey
Cactus ferruginous pygmy-owl Glaucidium brasilianum cactorum	Е	3/10/97	Mature cottonwood/willow, mesquite bosques, and Sonoran Desertscrub
California Brown pelican Pelecanus occidentalis californicus	Е	3/6/85	Feed in shallow estuarine waters; nest on small coastal islands
Mexican spotted owl Strix occidentalis lucida	Т	3/15/93	Nests in canyons and dense forests with multi-layered foliage structure
Mountain Plover Charadrius montanus	PT	2/16/99	Open arid plains, short-grass prairies, and cultivated farms
Northern aplomado falcon Falco femoralis septentrionalis	Е	1/25/86	Grassland and Savannah
Southwestern willow flycatcher Empidonax traillii extimus	Е	2/27/95	Cottonwood/willow and tamarisk vegetation communities along rivers and streams
Whooping crane Grus Americana	Е	3/11/67	Marshes, prairies, natural lakes

Table 3-1 continued

Common/Scientific Name	Status	Date Listed	Habitat
AMPHIBIANS			
Chiricahua leopard frog Rana chiricahuensis	Т	6/13/02	Streams, rivers, backwaters, ponds, and stock tanks
Sonora tiger salamander Ambystoma tigrinum stebbinsi	Е	1/6/97	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains
INVERTEBRATES			
Huachuca springsnail Pyrgulopsis thompsoni	С	1/6/89	Aquatic areas, small springs with vegetation slow to moderate flow
MAMMALS			
Black-tailed prairie dog Cynomys ludovicianus	С	10/4/99	Short-grass prairie habitats
Jaguar Panthera onca	Е	3/28/72	Found in tropical rainforests, arid scrub, and wet grasslands and prefer dense forests or swamps with a ready supply of water
Lesser long-nosed bat Leptonycteris curasoae yerbabuenae	E	9/30/88	Desert scrub habitat with agave and columnar cacti present as food plants
Mexican gray wolf Canis lupus baileyi	E	3/11/67	Chaparral, woodland, and forested areas; may cross desert areas
Jaguarundi Felis yagouaroundi cacomitli	E	6/14/76	Dense thorny thickets of mesquite and acacia
Ocelot Leopardus pardalis	E	7/21/82	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub
REPTILE			
New Mexican ridge-nosed rattlesnake Crotalus willardi obscurus	Т	4/4/78	Presumably canyon bottoms in pine-oak and pin-fir communities

Table 3-1 continued

Common/Scientific Name	Status	Date Listed	Habitat
FISHES			
Beautiful shiner Cyprinella formosa	Т	8/31/84	Small to medium sized streams and ponds with sand, gravel, and rock bottoms
Gila chub Gila intermedia	С	9/18/85	Pools, springs, cienegas, and streams
Loach minnow Tiaroga cobitis	Т	10/28/86	Cool to warmwater, low gradient streams and rivers in the Gila River basin
Spikedace Meda fulgida	Т	7/1/86	Cool to warmwater streams and rivers of moderate gradient in the Gila River basin
Yaqui catfish Ictalurus pricei	Т	8/31/84	Moderate to large streams with slow current over sand and rock bottoms
Yaqui chub Gila purpurea	Е	8/31/84	Deep pools of small streams, pools, or ponds near undercut banks
Yaqui topminnow Poeciliopsis occidentalis sonoriensis	E	3/11/67	Vegetated springs, brooks, and margins of backwaters. Found generally in the shallows

Legend: E – Endangered C – Candidate T – Threatened PT – Proposed Threatened

Source: AGFD & HDMS, 2002.

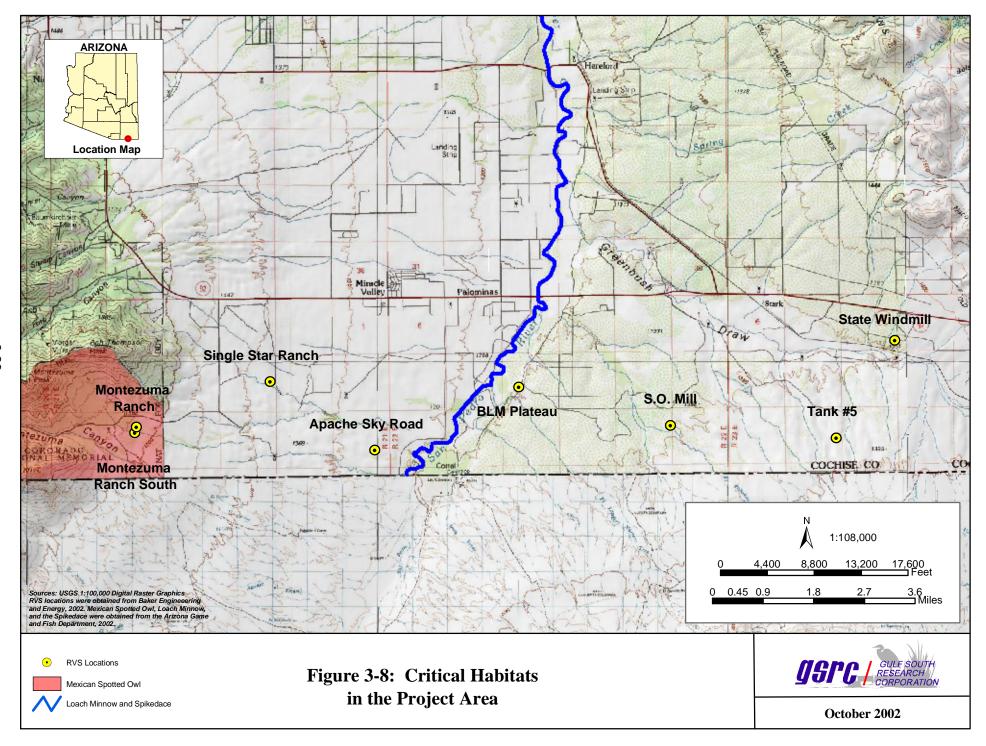
Last Updated January 15, 2002.

to El Salvador" (Bat Conservation International 2001, University of Arizona 2001). The occurrences in southern Arizona range from "the Picacho Mountains southwest to the Agu Dulce Mountains, southeast to the Chiricahua Mountains" (University of Arizona 2001). Assessments were conducted during a field survey performed in 2001 (INS 2001b) and were based on the presence of the columnar cacti and agaves, which are preferred food sources, and appropriate roosting and breeding sites, such as caves and mines (Bat Conservation International 2001, University of Arizona 2001). No such cacti or roosting and breeding sites were observed on or in proximity during field surveys of the proposed RVS sites. Agaves were observed at the North of Monument 90 site during the site visits in March 2002. These agaves should be flagged and avoided during construction if possible.

3.2.1.2 Critical Habitat

The Endangered Species Act also calls for the conservation of what is termed Critical Habitat - the areas of land, water, and air space that an endangered species needs for survival. Critical habitat also includes such things as food and water, breeding sites, cover or shelter, and sufficient habitat area to provide for normal population growth and behavior. One of the primary threats to many species is the destruction or modification of essential habitat by uncontrolled land and water development.

A total of one plant, two birds, four fishes and one reptile have critical habitats in Cochise County. The three animals with designated critical habitat that occur in the project vicinity are the Mexican spotted owl (*Strix occidentalis lucida*), loach minnow (*Tiaroga cobitis*) and spikedace (*Meda fulgida*). The USFWS designated 11 critical habitat units totaling 830,803 acres within Arizona for the Mexican spotted owl on February 1, 2001 (66 *Federal Register* 8530-8553) (USFWS 2002). The Montezuma Ranch sites are located within a portion of critical habitat for the Mexican spotted owl. The USFWS designated 52.2 miles of rivers and creeks as critical habitat for the loach minnow and spikedace in Cochise County on April 25, 2000 (65 *Federal Register* 24327-24372) (USFWS 2002). The BLM Plateau and Apache Sky Road sites are also located near, but not within, critical habitat for the loach minnow and spikedace (Figure 3-8).



3.2.1.3 State

The AGFD maintains lists of Wildlife of Special Concern in Arizona. This list includes flora and fauna whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines (AGFD 2002). These species are not necessarily the same as those protected by the Federal government under the Endangered Species Act.

The Arizona Department of Agriculture maintains a list of protected plant species within Arizona. The 1999 Arizona Native Plant Law defined five categories of protection within the state. These include: Highly Safeguarded, no collection allowed; Salvage Restricted, collection only with permit; Export Restricted, transport out of state prohibited; Salvage Assessed, permit required to remove live trees; and Harvest Restricted, permit required to remove plant by-products (AGFD 2002).

There was no evidence of or observations of any state-listed flora or fauna in the project area during the March 2002 site visit. Several plants covered under the Arizona Native Plant Law were noted on the proposed RVS sites. A Notice of Intent to Clear Land Form would be filed with the Arizona Department of Agriculture 30 days prior to the initiation of construction activities.

3.2.2 Impacts of the No Action Alternative

Implementation of the No Action Alternative would not allow the construction of the RVS systems; therefore, no direct impacts to protected species or critical habitats would occur under this alternative. However, indirect impacts could occur from illegal traffic trampling vegetation and threatened and endangered plant species and disturbing wildlife.

3.2.3 Impacts of the Proposed Action Alternative

No direct adverse effects to threatened or endangered species would occur as a result of the Proposed Action Alternative. The Montezuma Ranch sites are located within Mexican spotted owl critical habitat. These sites are previously disturbed and do not contain suitable habitat or primary constituent elements for the Mexican spotted owl based on the life requisites discussed in Table 3-1. The BLM Plateau and Apache Sky Road sites are located near critical habitat (2,500 ft and 3,000 ft, respectively) for the loach minnow and spikedace. However, due to the limited size of the sites and the distance from the critical habitat, no impacts are expected.

Therefore, no adverse impacts to Federally listed threatened and endangered species are anticipated as a result of the implementation of the Proposed Action Alternative. However, indirect benefits would be expected as the RVS systems reduce illegal traffic in the area indirectly reducing impacts on protected species and critical habitats like trampling vegetation, threatened and endangered plant species, and disturbing wildlife.

3.3 LAND USE

3.3.1 Affected Environment

In general, the land use is indicative of the land ownership. The major land uses within Cochise County include agriculture, rangeland, urban, forest, recreation/special use, and water. The major Federal agencies controlling large land areas are the U.S. Forest Service (USFS) and the BLM. The major state agencies controlling large areas of land are the Arizona Departments of Land and State Parks and Game and Fish. Native American Nations also own significant areas of land. Private and corporate land use includes urban areas, intensive specialized agricultural land, and large expanses of rangeland. "Other" land ownership includes land controlled by other Federal agencies, such as the NPS, Department of Defense, and U.S. Fish and Wildlife Service (USFWS), along with county and municipal lands.

3.3.2 Impacts of the No Action Alternative

Implementation of the No Action Alternative would not affect current land use in the project area.

3.3.3 Impacts of the Proposed Alternative

Implementation of the Proposed Action would change land use of the sites from their current land use to the proposed RVS systems. Due to the small size, and isolated locations of the proposed RVS systems, the changes to regional land use would be negligible.

3.4 SOILS

3.4.1 Affected Environment

Arizona has a diverse assortment of soil types throughout the state with variation is depth, texture, chemical properties and appropriate land uses. This diversity is directly related to regional differences in climate, parent material, topography and erosion actions. The predominant soil associations found along the project corridor in Cochise County are described below as defined by Hendricks (1985).

Soil Associations

The dominant soil associations in the project corridor are the Nickel-Latene-Pinaleno Association, Lithic Haplustolls-Lithic Argiustolls-Rock Outcrop Association, and the White House-Bernardino-Hathaway Association.

The Lithic Haplustolls-Lithic Argiustolls-Rock Outcrop Association is found in the western portion of the project corridor. It consists of well-drained, dark colored, shallow and very shallow, gravelly and cobbly, and gently sloping to very steep soils. These soils are located on rock outcrops, hills and mountains at elevation of approximately 7,046 feet. The Nickel-Latene-Pinaleno Association is found on the eastern portion of the project corridor and is fairly extensive. It consists of well-drained, deep and shallow, limy and gravelly, and nearly level to very steep soils on dissected old alluvial fans and terrace escarpments. These soils are primarily located along the San Pedro River and San Simon Creek at elevations of 2,409 to 5,016 feet. The White House-Bernardino-Hathaway Association is extensively found in the central portion of the project corridor. It consists of very deep, well-drained soils that formed in fan alluvium. It is deep gravelly clay loams found on fans or piedmont plains with slopes ranging from zero to 45%. Elevation ranges from 3,300 to 5,400 feet.

3.4.2 Impacts of the No Action Alternative

With the implementation of the No Action Alternative there would be no impacts to soils because no RVS systems would be constructed; however, the USBP would not be as effective in apprehending illegal entrants and illegal foot and vehicle traffic would continue at its current level and probably increase. The continuation of illegal traffic and consequent enforcement activities has the potential of adversely impacting soils in the project area.

3.4.3 Impacts of the Proposed Alternative

Implementation of the Proposed Action Alternative would disturb a negligible amount of soils along the project corridor. Access roads totaling approximately 1.7 miles (14 feet in width) would need to be installed/improved to facilitate the Proposed Action Alternative. The total amount of soils, which would be permanently impacted upon completion of the Proposed Action Alternative, is approximately 3.5 acres. The footprints of all of the proposed sites have also been previously disturbed; therefore, the impacts to soils by the Proposed Action Alternative would be negligible.

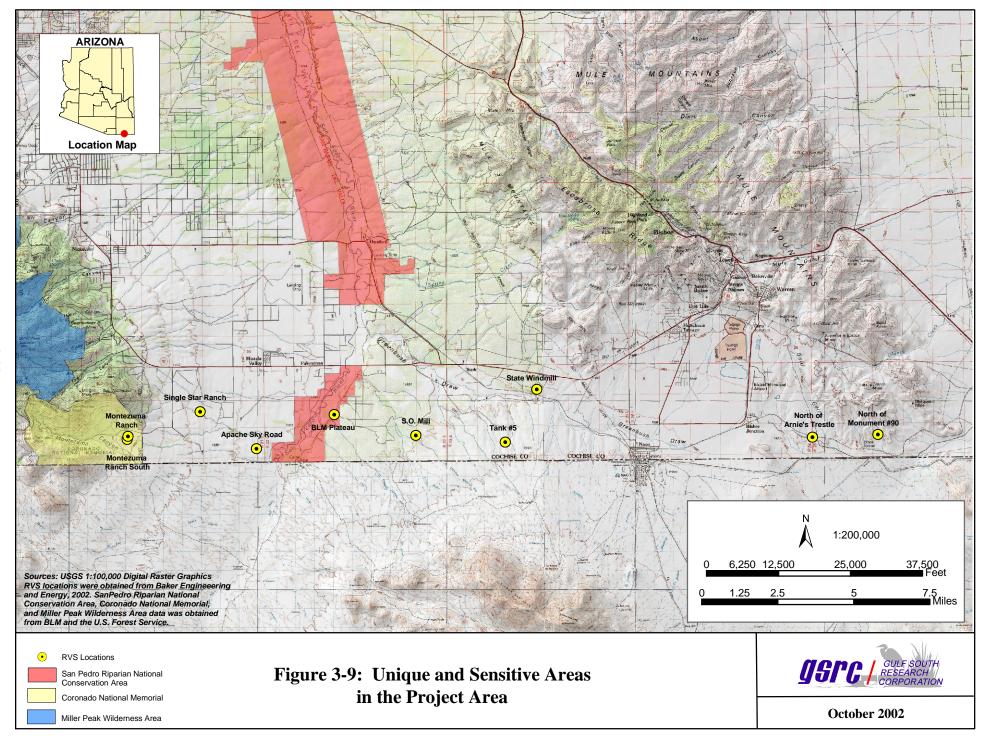
Mitigation measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities. Additionally, all construction equipment and vehicles will be required to be kept in good operating condition to minimize exhaust emissions. Standard construction practices would be used to control fugitive dust during the construction of the proposed RVS systems.

3.5 UNIQUE AND SENSITIVE AREAS

3.5.1 Affected Environment

Several unique or sensitive areas are found in or near Cochise County, Arizona (Figure 3-9). The BLM Plateau site is located in the San Pedro Riparian National Conservation Area, which includes 58,000 acres of public land located between the Mexican border and St. David, Arizona. This national conservation area was designated by Congress in 1988 to conserve, protect and enhance the desert riparian ecosystem. The national conservation area supports over 350 species of birds, over 80 species of mammals, two native and several introduced species of fish, and more than 40 species of amphibians and reptiles.

The Montezuma Ranch and Montezuma Ranch South sites are located in Coronado National Memorial within the Montezuma Ranch cultural landscape. The Montezuma Ranch cultural



landscape itself is heavily altered and has a low integrity. A detailed description of the Montezuma Ranch cultural landscape is presented in Section 3.10.2. Coronado National Memorial is a 4,976-acre national memorial which commemorates the entry of the Spanish explorer Don Francisco Vasquez de Coronado to southern Arizona from Mexico in 1540. His fabled expedition was an effort to explore the southwest, but more importantly, to discover the infamous Seven Golden Cities of Cibola. Visitors to the memorial are afforded opportunities of sweeping views from atop Montezuma Pass. This vista provides spectacular views of both the San Pedro River Valley and the San Rafael Valley. In addition, the 780-mile Arizona Trail, which bisects the entire state, south to north, begins here at the Mexican border.

The centerpiece of Miller Peak Wilderness Area (20,190 acres) is Miller Peak, reaching 9,466 feet at its summit. Cliffs many hundreds of feet high, overlooking panoramas that have been considered some of the best in the American southwest characterize the natural beauty encompassed by this area. This wilderness area was established in 1984 as a preserve of the Huachuca Mountains within the Coronado National Forest. Birding has become one of the leading attractions in the area due to the presence of over 170 bird species, which includes 14 species of hummingbirds. More than 60 species of reptiles and 78 species of mammals are found here as well (Great Outdoor Recreation Pages 2000).

3.5.2 Impacts of the No Action Alternative

The No Action Alternative would allow for the continued degradation of unique and sensitive areas in the project area. Unique and sensitive areas throughout the border have been impacted by illegal border traffic through the creation of trails and footpaths, illegal vehicle traffic, damaged by fires, and with littered with trash and other debris left throughout these areas (INS 2002a).

3.5.3 Impacts of the Proposed Action Alternative

There are several areas classified as unique natural areas found within the proposed project region. These special areas consist of pristine or near-pristine areas in or adjacent to mountains or broad riparian areas, both of which provide rare ecological assemblages for this arid region. Impacts to these wild and scenic areas may also include adverse effects to the intrinsic aesthetic values of the natural scenery (the RVS poles).

The Proposed Action Alternative would have negligible effects on unique and sensitive areas in the project area. The proposed RVS systems would remove 2,500 ft² of soils, vegetation, and potential wildlife habitat from the San Pedro National Conservation Area for the BLM Plateau Site. Additionally, 900 ft² of soils, vegetation, and potential wildlife habitat would be impacted within Coronado National Memorial for either the Montezuma Ranch or the Montezuma Ranch South Site. Coordination with NPS and BLM would ensure impacts to these resources are minimized. Although three of the proposed locations are located within unique and sensitive areas, the locations which would be impacted are already disturbed from public and private development such as, grazing, pedestrian and vehicle traffic use from tourists and associated impacts such as erosion and vegetation removal. Miller Peak Wilderness Area is located approximately 2.75 miles from the Montezuma Ranch site and would not be impacted.

Impacts from the placement of these structures may be described as diminishing the aesthetic value of the natural beauty of the surrounding areas. However, security measures due to the proximity of the international border, justify these impacts in terms of safety of visitors and to protect the other sensitive resources in these areas. Park visitors, park employees, and local residents of neighboring communities have expressed concern about encountering UDAs or drug smugglers within the park (INS 2002a). As a result some of the park neighbors report that they will not hike in the park, or even visit it, due to this fear (INS 2002a). The establishment of the RVS system in this area would help to reduce UDA traffic and the movement of drug smugglers through the park creating a safer environment for visitors, park staff an their families. An indirect result would be an increase in use of the memorial as the area becomes safer for visitors and hikers.

3.6 AIR QUALITY

3.6.1 Affected Environment

The EPA established National Ambient Air Quality Standards (NAAQS), for specific pollutants determined to be of concern with respect to the health and welfare of the general public. The EPA defines ambient air quality in 40 CFR 50 as "that portion of the atmosphere, external to buildings, to which the general public has access". Ambient air quality standards are intended to protect public health and welfare and are classified as either "primary" or "secondary"

standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The major pollutants of concern, or criteria pollutants, are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, suspended particulate matter less than ten microns, and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Short-term standards (1-, 8- and 24-hour averaging periods) are established for pollutants contributing to acute health effects, while long-term standards (annual averages) are established for pollutants contributing to long-term health effects. The NAAQS are included in Table 3-2. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas.

The EPA requires each state to develop a state implementation plan that sets forth how the Clean Air Act (CAA) provisions will be implemented within that state. The state implementation plan is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA and EPA, approval of the state implementation plan must be made by the EPA. The purpose of the state implementation plan is twofold. First, it must provide a strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

Arizona is located in the EPA's Region 9. The Arizona Department of Environmental Quality is the state agency responsible for "controlling present and future sources of air pollution" (ADEQ 2002). Arizona's Ambient Air Quality Standards for the criteria pollutants are currently the same as the NAAQS.

Within Cochise County, Douglas and Paul Spur are currently in violation of the NAAQS for particulate matter less than 10 microns in diameter (EPA 2002). Douglas is also currently in

Table 3-2 National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE*	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m ³)	Р
1-hour average	35ppm (40mg/m ³)	Р
Nitrogen Dioxide		
Annual arithmetic mean	0.053 ppm $(100_{\mu}/\text{m}^3)$	P and S
Ozone	•	
1-hour average	0.12ppm (235µg/m³)	P and S
8-hour average	0.08 ppm (157_{μ} g/m ³)	P and S
Lead	·	
Quarterly average	1.5µg/m ³	P and S
Particulate<10 micrometers	, -	
Annual arithmetic mean	50 _μ g/m ³	P and S
24-hour average	150µg/m ³	P and S
Particulate<2.5 micrometers		
Annual arithmetic mean	15µg/m³	P and S
24-hour average	65μg/m ³	P and S
Sulfur Dioxide		
Annual arithmetic mean	0.03 ppm (80_{μ} g/m ³)	Р
24-hour average	0.14ppm (365µg/m ³)	Р
3-hour average	0.50ppm (1300µg/m ³)	S

Source: EPA 2001.

Legend: P = Primary

S = Secondary

ppm = parts per million

mg/m³ = milligrams per cubic meter

 $\mu g/m^3$ = micrograms per cubic meter

violation of the NAAQS for sulfur dioxide (EPA 2002). Cochise County is currently in attainment for all other Federal NAAQS.

3.6.2 Impacts of the No Action Alternative

The No Action Alternative would contribute negligible amounts of additional fugitive dust and vehicle emissions to local air quality as USBP continues to frequent these areas. Without the proposed RVS systems, it is envisioned that illegal foot and vehicle traffic would continue or possibly increase in these areas. This would be exacerbated by the fact that USBP would be forced to increase the frequency of vehicle trips to these areas as additional enforcement action become necessary contributing additional pollutants from vehicle traffic and fugitive dust.

3.6.3 Impacts of the Proposed Action Alternative

^{*}Parenthetical value is an approximately equivalent concentration.

The Proposed Action Alternative would contribute negligible amounts of additional fugitive dust and vehicle emissions during construction. These pollutants would be temporary in nature and considering the good dispersal patterns of the region would result in negligible effects on regional air quality. The proposed RVS systems would allow the USBP to decrease the frequency of vehicle trips to these areas and decrease the long term contribution of fugitive dust and vehicle emissions from vehicle traffic.

Mitigation measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities and installation of the RVS systems. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions. Standard construction practices would be used to control fugitive dust during the construction phases of the Proposed Action Alternative.

3.7 WATER RESOURCES

3.7.1 Affected Environment

The project area receives water from surface runoff and groundwater via precipitation and snowmelt in the local mountains. Geologic forces have created a regional terrain that includes arroyos or washes (deep gullies), steep canyons, and somewhat flat basins. Due to the arid climate of the area, most of the drainage channels are dry most of the year. Rivers and streams that flow periodically due to fluctuations in precipitation are referred to as being ephemeral. Intermittent waterways (rivers, streams, etc.) are those that flow most of the year, but are dry for extended periods. Due to the flash flood tendency of the washes, sediment loads are high when water is present. Natural and human-induced factors determine the quality of these resources. Numerous small ephemeral drainages transect the project corridor.

The major surface water drainages in the project area are the San Pedro River and Greenbush Draw which flows just north of Naco and is a tributary of the San Pedro River. Numerous smaller streams, which are intermittent or ephemeral in nature, flow to or from the draw depending on topography. Executive Order 11988, *Floodplain Management*, requires all Federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. Certain construction within a 100-year floodplain requires

preparation of a Statement of Findings. The Federal Emergency Management Agency has mapped the 100-year floodplain in the project area. The Single Star Ranch, BLM Plateau, and North of Arnie's Trestle sites are not located in the 100-year floodplain, but are located in close proximity to the 100-year floodplain.

Groundwater resources in the surrounding areas are present in both unconfined and confined conditions. Water depths to unconfined water are between 50 to 570 feet, while confined water can be found at 500 to 1,000 feet below the ground (INS 2000a).

More information on surface and groundwater resources within the Naco area is described in detail in the EA for Infrastructure within USBP Naco-Douglas Corridor, Cochise County, Arizona (INS 2000a) and the EA for JTF-6 Proposed Fence and Road Improvement Project, Naco, Cochise County, Arizona (USACE 2000b). The information contained in these two EAs is incorporated herein by reference (INS 2000a; USACE 2000b).

Section 404 of the Clean Water Act (CWA) of 1977 (P.L. 95-217) authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), to issue permits for the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters including interstate wetlands. Waters of the United States are further defined and may include waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Jurisdictional boundaries for Waters of the U.S. are defined in the field as the ordinary high water marks which is that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural lines impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The Supreme Court ruling in the Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers case ("SWANCC", Case No. 99-1178) on January 9, 2001 restricted the EPA and the USACE's regulatory authority over waters of the United States under the Clean Water Act. The Court ruled that 33 C.F.R. Section 328.3(a)(3) (1999) pursuant to the "Migratory Bird Rule," 51 Federal Register 41217 (1986), exceeds the authority granted to these agencies under Section 404 of the CWA. Waters that could affect interstate commerce solely by virtue of their use as habitat by migratory birds are no longer considered "waters of the United States" under SWANCC. The ruling mainly affects those areas defined as waters of the United States in 33 C.F.R. Section 328.3(a)(3) (1999). Areas that are, or potentially are affected by SWANCC include: intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs prairie potholes, wet meadows, playa lakes, or natural ponds.

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987).

Activities that result in the dredging and/or filling of jurisdictional wetlands are regulated under Section 404 of the CWA. The USACE has established nationwide permits to efficiently authorize common activities, which do not significantly impact Waters of the U.S., including wetlands. The nationwide permits were modified and reissued by the USACE in the Federal Register on 15 January 2002, with an effective date of 18 March 2002. All nationwide permits have an expiration date of 19 March 2007. The USACE has the responsibility to authorize permitting under a NWP, or to require an Individual Permit.

3.7.1.1 Waters of the U.S. and Wetlands

None of the proposed RVS sites are located in or near jurisdictional waters of the United States, including wetlands. However, four ephemeral surface waters occur within the area scheduled for road improvements at this location. All are small ephemeral drainages that collect water in the form of sheet flow during storm events. No vegetation was present in the channel of these ephemeral drainages. The first drainage is approximately 1.5 ft. wide at the ordinary high water marks. Common vegetation along the top banks includes whitethorn acacia, desert zinnia (*Zinnia acerosa*), and mariola (*Parthenium incanum*).

The remaining ephemeral drainages are braided in the uplands and converge downstream near the railroad bed at the North of Monument 90 site (See Figure 3-2). The second and third ephemeral drainages are approximately 3 ft. wide at the ordinary high water marks and the fourth ephemeral drainage is approximately 2 ft. wide at the ordinary high water marks. Common vegetation along the top of banks in these ephemeral drainages includes mesquite, oreganillo, and dropseeds (*Sporobolus* sp.). Although no wetlands are associated with these drainages, they would be considered Waters of the United States and, thus, subject to regulations under Section 404 of the CWA.

The USBP proposes to grade these drainages to permit construction vehicle access to the site. It is the intent of the USBP to permit these under a NWP 14. The USBP has consulted with the USACE, Los Angeles District to verify authorization under a NWP 14.

3.7.2 Impact of the No Action Alternative

Under the No Action Alternative, no grading would be done, and no other activities affecting water quality would be conducted. Therefore, under this alternative, there would be no impacts to water quality. In addition, no waters of the U.S. would be impacted under this alternative.

3.7.3 Impacts of the Proposed Action

A Statement of Findings for floodplains would not be necessary because none of the sites are located within the 100-year floodplain. Short-term adverse impacts to surface water quality are anticipated from the grading of the ephemeral drainages in association with road improvements at the North of Monument 90 site. Construction activities would most likely cause minor soil erosion from short-term construction activities. Loss of vegetation due to construction adjacent to these areas is not expected to affect water quality in the area.

Mr. Robert Dummer of the USACE, Los Angeles Field Office in Phoenix was consulted regarding Section 404 compliance for grading of the ephemeral drainages that traverses the access road (Dummer 2002). Impacts to the gully would qualify for NWP Number 14 (Linear Transportation Projects). Basic requirements to qualify for NWP 14 specify the loss of waters of the U.S. must not be greater than a half acre. The affected waters of the U.S. for this project are

less than 0.01 acres. The Arizona Department of Environmental Quality (ADEQ) was also consulted regarding Section 401 of the CWA (Water Quality Certification) requirements. Conditions imposed on NWP 14 by ADEQ are as follows:

Section 401 Conditions For Nationwide Permits 3, 7, 12, 14, 39, 42 & 43:

- 1) Prior to use as fill, earthen materials obtained from agricultural, mining or other potentially contaminated areas shall be tested and evaluated for compliance with General Condition 18 (Suitable Materials).
- 2) The work area shall be restored after construction to an environmentally acceptable condition. All construction materials and residues, construction equipment, and other nonnative materials shall be removed and properly disposed outside of the 100-year floodplain.
- Upon completion of construction, the authorized work shall restore or maintain the stability of upstream and downstream watercourse segments with respect to erosion and sedimentation.
- 4) Earthen fill placed in locations subject to scour shall contain not more than ten percent (10%) of particles that are finer than 0.25 mm diameter (passing a No. 60 sieve, on a dry weight basis).
- 5) Stockpiles of construction materials shall be stored outside of jurisdictional waters.
- 6) No discharge of process water, material processing residues, wastewater or other residual materials is authorized within jurisdictional waters.

Compliance with NWP 14 and Section 401 of the CWA (water quality certification) do not obviate other Federal or state permits. These conditions would be adhered to during project construction. No jurisdictional wetlands were found within the project area. Because road grading would involve less than five acres, a Storm Water Pollution Prevention Plan, as required by Section 402 of the Clean Water Act, would not be required provided the work is completed by March 2003. In order to minimize the potential for erosion from storm water runoff, grading shall occur during the dry season.

The use of Best Management Practices (BMPs) including, erosion and sedimentation control measures, are included in standard operating procedures required by INS and would be implemented by contractors or governmental agencies performing the work. Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. As a result of the RVS installation techniques, significant impacts on soils in the proposed construction area would not be expected. Construction

techniques to reduce the potential for soil erosion and subsequent sedimentation in water resources would include installing culverts, and the suspension of construction activities during rain events. All work would stop during heavy rain and would not resume until conditions are suitable for movement of equipment and material.

Early coordination by INS with the USACE Los Angeles District, Regulatory Branch and ADEQ would be initiated concerning construction activities in the waters of the U.S. Applicable NWP 14 and Section 401 permit procedures shall be completed prior to initiation of the construction activities.

3.8 NOISE

3.8.1 Affected Environment

The three common classifications of noise are: (1) general audible noise that is heard by humans; (2) special noise, such as sonic booms and artillery blasts that can have a sound pressure or shock component; and (3) noise-induced vibration also typically caused by sonic booms and artillery blasts involving noise levels that can cause physical movement (i.e., vibration) and even possible damage to natural and man-made structures such as buildings and cultural resource structures. Most noise sources would fall within the audible noise classification because of the rural nature of the majority of the project area.

Audible noise typically is measured in A-weighted sound pressure levels expressed in decibels. The A-scale de-emphasizes the low and high frequency portions of the sound spectrum and provides a good approximation of the response of the average human ear. On the A-scale, zero decibels represents the average least perceptible sound, such as gentle breathing, and 120 decibels represents the intensity at which the eardrum may rupture, such as a jet engine at open throttle (National Research Council 1977).

Since the proposed activities are not capable of causing special noises, all noise levels discussed herein are measured on the A-scale decibels. Normal rural noise levels in the project area would range from a low of 35 decibels over the majority of the corridor to a high of less than 60 decibels near any rural community. More detailed information on noise in the project area can be found in previous EAs (USACE 2000a; USACE 2000b) and is incorporated herein by reference.

3.8.2 Impacts of the No Action Alternative

The No Action Alternative would not result in any increases or decreases in ambient noise levels. The current illegal foot traffic, and other illegal activity would continue resulting in the need for additional patrols or aerial reconnaissance along the border, which would increase ambient noise levels.

3.8.3 Impacts of the Proposed Action Alternative

The Proposed Action Alternative would result in construction noise during RVS system installation, road construction, and pad grading. Construction activities would temporarily increase noise levels temporarily at locations immediately adjacent to the RVS sites; however, there are no sensitive receptors within 0.5 miles of the sites. Noise levels created by construction equipment would vary greatly depending on factors such as the type of equipment, the specific model, the operation being performed, and the condition of the equipment. The equivalent sound level of the construction activity also depends on the fraction of time that the equipment is operated over the time period of the construction. Heavy equipment such as drill rigs and cement and dump trucks would cause temporary increases in noise levels during construction. The installation of a RVS site generally requires less than two weeks.

During the construction phase, noise impacts are anticipated at local human receptors. As required by Occupational Safety and Health Administration, earplugs would be worn by employees working in environments with continuous noise levels of 8 hours per day above 90 decibels. Because of the increased noise sensitivity during quiet hours, time limits on on-site construction activities are warranted for use of heavy equipment. On-site activities would be restricted to daylight hours on Monday through Saturday.

The five proposed propane generators would produce additional noise during operation and raise the ambient noise levels slightly in the vicinity of the RVS system. However, since the propane generators would be used on an as-needed basis, the effects of noise would be minor and localized. The RVS equipment itself produces negligible noise that would be barely perceptible (~0 Db). Monthly maintenance would require a 4WD truck to transport equipment to the site and would not create a significant impact to local noise levels.

3.9 **AESTHETICS**

3.9.1 Affected Environment

Aesthetic resources consist of the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. All of the sites except the Montezuma Ranch sites are located in remote locations not generally visible to or accessed by the public. These sites have been previously degraded due to past and ongoing human disturbances including vehicle traffic, grazing, and other sources.

The Montezuma Ranch sites are located within the Montezuma Ranch cultural landscape. The Montezuma Ranch cultural landscape itself has been previously disturbed from its original natural and historic contexts due to the use of the site as a residency (NPS 1999). However, the aesthetics and views within Coronado National Memorial are spectacular and are an important aspect of visitors experience to Coronado National Memorial.

3.9.2 Impacts of the No Action Alternative

Under the No Action Alternative further degradation of aesthetics would occur due to human disturbances. Illegal traffic would continue to create paths and trails that would detract from local aesthetics.

3.9.3 Impacts of the Proposed Action Alternative

Under the Proposed Action Alternative no further significant degradation of aesthetics would occur due to the previously disturbed nature of the sites. The proposed RVS systems could detract from the visual experience of visitors to the area. The proposed RVS systems would provide positive beneficial impacts by reducing illegal traffics and trails in the project area.

In order to minimize visual impacts within Coronado National Memorial, the following mitigation measures would be implemented for the Montezuma Ranch sites. The RVS poles would be painted a flat earth tone such as medium dark gray or tan/sandy brown. No white, black, or dark colors would be used on the poles. The USBP or its contractors will evaluate the Montezuma Ranch sites for the use of a 60 foot pole, instead of the proposed 80 foot pole, in order to

minimize potential visual impacts to the visitor's experience in Coronado National Memorial. Evaluation of the use of a 60 foot pole will be based upon local vegetation, topography, line-ofsight with other RVS systems, and other engineering factors. Fencing around the poles will be galvanized or treated with a non-toxic agent to allow for the natural weathering of the fence. This would eliminate the reflective tendency of new chain link fence material. The entire footing of the pole would be recessed at least 2 inches below grade and allowing the cement footer to be covered by local earth materials. No crushed rock will be used within the fenced area or other disturbed areas around the pole. Site access will be along existing roads which will be regarded were needed to return them to preconstruction condition. If permitted by the local utility company, electrical lines will be run underground where practical on NPS property. If buried electrical lines are not possible, the poles used will be of similar size and type as exist on the site. New areas of disturbance around the buried line/poles shall be reclaimed by backfilling with excavated earth and excess material will be evenly spread over the surface area of the disturbance. The disturbed area will be hand raked to remove all piles of plant debris, and to reestablish surface contours. Revegetation with native species will be done in disturbed area where practical.

3.10 CULTURAL RESOURCES

Section 106 of the National Historical Preservation Act requires the INS to identify and assess the effects of its actions on cultural resources. Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. The INS must consult with appropriate State and local officials, Native American Indians, and members of the public and consider their views and concerns about historic preservation issues when making final project decisions. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the Council. Revised regulations, "Protection of Historic Properties" (36 CFR Part 800), and became effective January 11, 2001.

3.10.1 Cultural Setting

A brief cultural setting is presented for the project area within this section. The cultural setting of the project area is generally divided into six different periods: Pre-Clovis, Paleoindian,

Archaic, Formative, Late Prehistory and Protohistory and Spanish Exploration and Settlement. These periods are commonly subdivided into smaller temporal phases based on particular characteristics of the artifact assemblages encountered in each of three archeological regions within southern Arizona. The prehistoric periods and corresponding phases are defined by the presence of particular diagnostic artifacts such as projectile points, certain types of pottery, and occasionally, particular site locations. For the historic periods, documentary information more often is used to distinguish certain phases; nevertheless, particular artifacts also can be used to recognize certain historic affiliations. The following cultural chronology is taken predominantly from Vargas et. al. (2002) except where noted.

Pre-Clovis or "Early man sites" in the New World, those defined as being occupied prior to 12,000 years ago, are most frequently reported in the southwestern deserts. Early man sites have been reported for ancient Lake Mannix, China Lake, Calico, and the Yuha Desert in California (Schuiling 1972; Davis 1978; Davis et al. 1981), and the Sierra Piñacate region of nearby Sonora, Mexico (Hayden 1976; Moratto 1984). No claims for humans in southern Arizona predating 12,000 years ago have met the scrutiny of the entire scientific community. At present, the earliest widely accepted human presence in the area is the Paleoindian Period (ca. 9500-6000 B.C.).

During the Paleoindian Period (9500-6000 B.C.) the project area was cooler and moister than at present with more abundant vegetation and occasional lakes, which are now evaporated. Pleistocene megafauna inhabited the area and were used as game by the Paleoindian hunters. The Paleoinidian people were organized as small-scale, mobile, socially fluid hunters and gathers. The Paleoindian Period is further divided in three complexes or phases: the Clovis Complex (ca. 9500-9000 B.C.), the Folsom Complex (ca. 9000-8000 B.C.) and the Plano Complex (ca. 8000-6000 B.C.).

The Archaic Period saw gradually drier and warmer conditions. These changes in the environment along with the extinction of the megafauna prompted subsequent changes in the stone tools of the Archaic people. There was the introduction of ground stone tools and grinding stones. The Archaic Period in southwestern New Mexico and southeastern Arizona has been defined as the Cochise Tradition. The Cochise Tradition has been subsequently divided in various

ways into the following phases: Sulphur Spring phase (6000-3500 B.C.), the Chiricahua phase (3500-1500 B.C.), the San Pedro phase (1200-800 B.C.), and the relatively recently proposed Cienega phase (800 B.C.-A.D. 200). The introduction of agriculture occurred during the Late Archaic Period, particularly the San Pedro and Cienega phases. Though agriculture was adopted during this period it is traditionally thought that it was a minor activity and that hunting and gathering still provide the dominant subsistence activity. Huckell, from his work in the Cienega Valley, proposed that maize farming was more important than previously thought and that the late Archaic populations were at least semi-sedentary (Huckell 1995). As a result he proposed that the period 1500 B.C. –A.D. 200 be redefined as the "Early Agricultural Period," separate from the Archaic Period. Archeological sites from this time period are of particular importance in answering questions regarding the importance of agriculture in the economy, settlement patterns and the degree of social organization that existed during this time period.

The Formative Period denotes a stage at which a population has an adequate subsistence base and social organization to sustain village life (Vargas et. al. 2002). During this stage agriculture becomes the dominant subsistence strategy. Also during this stage, ceramics assemblages become prominent, so much so that sometimes this period is referred to as the Ceramic Period. Near the project area, the Hohokam (300 B.C.-1450 A.D.) and Mogollon cultures, particularly for this area the San Simon Mogollon (A.D. 900-1200), plus elements of Trinceras, Chihuahuan, and Salado traditions are evident. These cultures and traditions vary regionally and temporally with one another. The Pueblo Culture Period, marked by the appearance of rock and adobe pueblos, has also been defined in the project area, though much of the material from this period could also be incorporated into the either the Mogollon or Hohokam traditions. The phases of the Pueblo Culture Period for the project area consists of the Ringo phase (A.D. 1250-1325), the Animas phase (A.D. 1175-1350), and the Salado phase (A.D. 1300-1450). The temporal and cultural sequences in the vicinity of the project area are poorly understood making exact sequences tenuous at best. Archeological sites within the project area dating to the Formative Period are of particular importance in defining both the temporal and cultural sequences of the area.

By the late 1400s much of the Hohokam and Mogollon areas appear to have been abandoned. After the collapse of the Hohokam regional system the Sobaipuri, Pima, and Tohono O'odham occupied the region, distinguished by environmental adaptations and geographic regions. The

southern Athapaskans or Apache moved into the southwest by approximately 1500. Seven groups of Athapaskan-speaking people are recognized: Chiricahua, Jicarilla, Kiowa-Apache, Lipan, Mescalero, Navajo, and Wester Apache. Both the Chiricahua and Western Apaches were in eastern Arizona (Vargas et. al. 2002).

Spanish Exploration and settlement of the area did not begin till 1536 by Cabeza de Vaca. This early exploration inspired Fransico Vasquez de Coronado to lead a large military expedition in 1540 and entered what is now the U.S. in southeastern Arizona. The colonial period and Spanish settlement of the area began much later than it did in New Mexico and western Texas. Building new missions in the area was largely the effort of Father Eusebio Fransico Kino who established the first mission in the Santa Cruz Valley in 1691. Spanish rule in the 18th century was well established in the Rio Grande Valley though Native American groups challenged Spanish rule throughout the area through a series of rebellions by the Yaquis, the Pimas, the Seris and Lower Pimas, along with raids and warfare with the Apaches. In southeastern Arizona the Spanish military authority and the Jesuits conflicted over control of the Native American populations. The military and civilian land owners wanted control of the Native population for labor. The military established garrisons or presidios. By 1767, the Jesuits were expelled from New Spain. Presidios were established across southern Arizona to provide defense against raiding Apaches, and thus protect local settlers encouraging further settlement of the area. The discovery of silver and copper in the region further encouraged settlement of the area (INS 2001a; Vargas et. al. 2002).

The most significant event of the 19th century for the region was Mexico's independence from Spain in 1821. During this period land grants were made to encourage settlement of the area. The Mexican-American War (1846-1848) arose out of America's desire to expand it borders to the Pacific Ocean, and border disputes between the U.S. and Mexico over the newly independent Texas, which was annexed by the U.S. The new international boundary ran along the Rio Grande from it mouth to just north of El Paso then west to the Pacific Ocean. The Gadsen Purchase, which was negotiated in 1853 and ratified in 1854, added the lands in southern Arizona and New Mexico establishing the border we have today. The newly acquired areas were not very well protected and near-anarchy within the region began to take root. This led to the establishment of Arizona County from Doña Ana County, with Tucson as its county seat. Arizona joined as a territory of the Confederate States of America but fell quickly that summer to Union forces and

became a U.S. territory and placed under Martial law. The Arizona territory was finally established in 1863. During the late 19th century the discovery of precious metals and the development of ranching produced a significant influx of Euro American settlers into the area and towns such as Douglas, Bisbee and Tombstone were established. Military forts and camps were established to protect the growing population of settlers from Apachean attacks. By the late 1880s the Apaches were pacified, which resulted in greater expansion of mining, ranching and settlement (INS 2001a; Varagas et. al. 2002).

During the early 1900s Douglas rapidly grew. Douglas became an important commercial center for the region. During the Mexican Revolution troops were established at Naco, Douglas and Slaughter Ranch to help protect U.S. citizens from the fighting occurring south of the border. Air patrols were run from the airfield in Douglas to observe the border area. This helped to establish the Douglas airport as one of the earliest international air facilities as well as the first operational military airfield in the U.S (INS 2001a).

3.10.2 Historic Resources and Cultural Landscapes

3.10.2.1 Affected Environment

Historic resources include settings or landscapes as well as structures and facilities. A Class III (intensive field inventory) non-collection, non-disturbance archeological survey, was conducted by TRC at 11 potential sites where the proposed RVS poles or towers would be constructed, which resulted in the 100 percent coverage of the study area parcels. In addition, site files were reviewed at the Arizona State Museum, the State Historic Preservation Office (SHPO), and the Coronado National Forest to identify previous projects and sites that occur within or near the project area. Map files at the General Land Office, housed at the BLM Arizona State Office in Phoenix, were also examined in order to identify any historic structures located on those maps.

One of the proposed RVS sites and its alternate site, (Montezuma Ranch and Montezuma Ranch South) are located within the Coronado National Memorial within the vicinity of Montezuma Ranch. Montezuma Ranch is a component landscape of the Coronado National Memorial parent landscape along with the Ratliffe Ranch/Zaleski Property, and the mining landscape. The Montezuma Ranch is made up of a series of buildings once used as a dude

ranch in the 1930s to 1950s. Features within the landscape include a ranch house, the main bunkhouse with smaller guest cabins, a swimming pool, shops, roads, fence/yard areas, a nonhistoric orchard and visual buffer plantings, open fields and rubbish piles. The site has undergone severe modification since the 1970s, such as the addition of a synthetic "snow" coating to the two building exteriors and several additions. The rest of the site is in poor condition, with the guest cabins badly dilapidated and rubbish piles everywhere. Several primary features dating to the historic times, such as the corrals are gone. As a result, the site has little integrity in relation to the historic period (NPS 1999). The NPS evaluated the Montezuma Ranch during a 1999 cultural landscapes inventory of Coronado National Memorial. Though the Montezuma Ranch was found to be locally significant under Criterion a, it had severe problems with integrity. As a result of the Level I cultural landscapes inventory, a Level II survey was not recommended and it was determined that the Montezuma Ranch should be considered ineligible for listing in the National Register of Historic Places (NHRP) as a historic landscape.

During the intensive field surveys, TRC identified a historic structure (AZ FF:9:85) located near the proposed North of Monument 90 RVS pole. This site was situated at an elevation of 4,640 feet average mean sea level on ridge north of an unnamed drainage at the southern end of the Mule Mountains, approximately 15 miles west of Douglas. The site consists of an irregularly shaped poured concrete structure. The trapezoidal-shaped structure measures 19 ft on the east side, 13.5 ft on the north side, 13 ft on the south side, and 6 ft on the west side. The 6.5 ft tall structure, which is missing its roof, is constructed from 1.5 ft thick walls that were poured in place. There is a 3.5 ft wide by 5 ft tall entrance on the west side of the structure. Apart from modern trash, there is no cultural material associated with the structure. The area in which the site is located has been moderately impacted by erosion, grazing, and road construction, with a road running adjacent to (east of) the structure.

Although the function of the structure could not be determined based on field analysis, it is possible that it is associated with the nearby mines in the area, or it could have been used as an outlook post by the border patrol based on its proximity to the border. It is possible that this structure is the building indicated on the U.S. Geological Survey map (Bisbee SE). The

structure appears to have been constructed after the installation of the nearby rail line, based on the railroad tie that was used for a lintel in the entrance.

This site is recommended as not eligible for inclusion in the NRHP. The structure does not appear to meet the age requirement of 50 years old or older. Artifacts associated with the structure consist of all modern debris further suggesting that the structure does not meet the necessary age requirement.

3.10.2.2 Impacts of the No Action Alternative

No direct impacts to cultural resources would be expected from the implementation of the No Action Alternative. However, due to the decrease in the effectiveness of the USBP efforts at UDA interdiction resulting from the lower level of surveillance around this area, indirect impacts to both known and unknown cultural resources could result as illegal foot traffic continues throughout the area unabated. Modern trash, like that observed at site AZ FF:9:85, would continue to be dumped distracting visually from the cultural landscape.

3.10.2.3 Impacts of the Proposed Action Alternative

Under the Proposed Action Alternative no impacts are anticipated to historic properties at the Montezuma Ranch location. Montezuma Ranch, though a component landscape of the Coronado National Memorial parent landscape, has been determined not eligible for listing on the NRHP as a historical landscape due to the overall lack of integrity of the site and is not considered a historic property. As a result placement of poles at either of the Montezuma Ranch sites near Montezuma Ranch would result in No Historic Properties Affected.

Site AZ FF:9:85 has been determined to be not eligible for listing in the NRHP under any criteria. As a result, No Impacts to Historic Properties are anticipated by the construction of the RVS pole at the North of Monument 90 site. Since no historic properties would be affected at either the Montezuma Ranch locations or the North of Monument 90 location, no impacts are anticipated to historic resources or cultural landscapes through the implementation of the Proposed Action Alternative. The USBP would continue ongoing coordination with the NPS

regarding aesthetic design of the RVS pole at the Montezuma Ranch location in compliance with the NPS General Management Plan. Cultural resource surveys and concurrence from the Arizona SHPO would be necessary, prior to any construction activities, for completion of the Section 106 process.

3.10.3 Archeological Resources

3.10.3.1 Affected Environment

As mentioned in Section 3.10.2.1 site files and maps were reviewed to identify any previous projects, historic structures, and potential archeological sites that occur within or near the project area. No previously recorded archaeological sites were located in the area of potential effect of any of the proposed RVS locations, and a total of 25 archaeological sites are located within on mile of the proposed RVS sites. In addition, a Class III (intensive field survey) was conducted by TRC from March 25-28, 2002 at all proposed RVS locations within the area of potential effect. No archeological resources were located during the survey of the potential RVS sites.

3.10.3.2 Impacts of the No Action Alternative

The No Action Alternative would have no direct effect on archaeological resources. Reductions in the USBP's ability to gain and maintain control of the border, however, would allow illegal entrants to continue to drive or walk through undisturbed areas within the project corridor. This illegal traffic could potentially have adverse impacts upon the region's cultural resources, many of which have not been discovered as yet. The potential magnitude of such effects, therefore, is unknown.

3.10.3.3 Impacts of the Proposed Action Alternative

No archeological resources have been identified within the area of potential effect during the surveys of the potential RVS sites or during the records check. As a result no impacts to archeological resources are anticipated to result from the implementation of the Proposed Action Alternative.

3.10.4 Ethnographic Resources

3.10.4.1 Affected Environment

Ethnographic resources are defined by NPS as a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. Ethnographic resources include Traditional Cultural Properties. Traditional cultural properties are resources associated with cultural practices and beliefs of a living community that are rooted in its history and are important in maintaining the continuing cultural identity of the community. Traditional resources may include archeological resources, locations of historic events, sacred areas, sources of raw material used to produce tools and sacred objects, topographic features, traditional hunting or gathering areas, and native plants or animals. The Zuni Peublo Tribal Council, White Mountain Apache Tribal Council, Tohono O'odham Nation, San Carlos Tribal Council, Pascua Yaqui Tribe, Hopi Tribal Council, Gila River Indian Community Council, and Ak Chin Community Council were contacted prior to any field surveys being conducted. Maps of all project locations were provided to each group and they were invited to give their views on the project. None of the groups contacted have identified any known ethnographic resources within the current area of potential effect.

3.10.4.2 Impacts of the No Action Alternative

No direct impacts to ethnographic resources would be expected from the implementation of the No Action Alternative. However, due to the decrease in the effectiveness of the USBP efforts at UDA interdiction resulting from the lower level of surveillance around this area, potential indirect impacts to both known and unknown ethnographic resources in the region could result as illegal foot traffic continues throughout the area unabated.

3.10.4.3 Impacts of the Proposed Action Alternative

No ethnographic resources have been identified within the area of potential effect through consultation of the appropriate Native American tribes outlined above. As a result, no impacts to ethnographic resources are anticipated from the implementation of the Proposed Action Alternative. In the event significant resources are subsequently identified, potential mitigating measures would be designed and implemented in full consultation with affected tribes to lessen or eliminate negative impacts.

3.11 CUMULATIVE IMPACTS

This section of the EA addresses the cumulative impacts associated with the proposed road and drainage improvements project and other projects/programs that are planned for the region. Following is a general discussion regarding cumulative effects that would be expected irrespective of the alternative selected, the various resources that would be impacted are addressed within each alternative discussion. In order to evaluate cumulative effects, documents from current, past, and future operations in the region are evaluated below (INS 2000a, 2000b, 2001a, 2001b; USACE 1996, 1998a, 1998b, 2000a, 2000b).

3.11.1 Affected Environment

3.11.1.1 Current Projects

The USBP and other entities are currently conducting projects in the region. On-going projects in the area include:

- a new USBP complex is currently being constructed along the King's Ranch Road near Douglas, Arizona, (INS 2002)
- the USBP Naco and Douglas Stations are installing portable lighting in the area,
- the Douglas station is in the process of constructing a low-water crossing at Whitewater Draw,
- temporary vehicle barriers are being placed at various locations within a 25-mile corridor for the Naco Area of Operations,
- Sierra Vista Air Operations,
- Wilcox USBP station,
- road improvements at Kings Ranch Road,
- performing1.5 miles of road improvements from Whitewater Draw to Cattleman's Road in Douglas,
- construction of an RVS relay tower at Crawford Hill,
- 4 miles of road and drainage improvements for the Naco station, and
- the Naco Station is completing 2 miles of vertical fence extensions on the extant primary fence.

3.11.1.2 Past INS Projects

Other past projects completed in the project area include:

- JTF-6 has completed activities from their 2001 EA for Proposed Fence, Lighting, Road Repair and Improvement Project in the Douglas area,
- 25 miles of border road improvements, east and west of the Douglas Port-Of-Entry,
- 2.0 miles of a new north/south access road, west of the Douglas Port-Of-Entry,
- 0.5 miles of new border roads, west of the Douglas Port-Of-Entry,
- 1.0 mile of landing mat fence on the west side of the Douglas Port-Of-Entry,
- permanent lighting poles along 3.0 mile on the east and west sides of the Douglas Port-Of-Entry,
- installation of 13 RVS systems in the Douglas corridor,
- 1.3 miles of decorative fence, east of the Douglas Port-Of-Entry,
- 2.7 miles of landing mat fence, east of the Douglas Port-Of-Entry,
- 7.0 miles of portable lights, east of the Douglas Port-Of-Entry,
- 32 miles of border road improvements in the Naco corridor,
- portable generator lights along a 25-mile corridor east and west of the Douglas Port-Of-Entry,
- installation of 2.0 miles of stadium style lights in the Naco corridor, and
- installation of eight RVS systems in the Naco corridor.

An analysis of each component of the affected environment was completed from the existing EAs in order to identify which actions would have cumulative impacts as a result of the past and proposed operations. Additional information was considered, including real estate ownership, growth rates, and known future projects in the area. No long-term significant impacts occurred from past projects.

Positive cumulative benefits have resulted from past INS activities. Improvements to roads and the installation of other detection/deterrence methods have increased the USBP's apprehension and interdiction rates. Improvements to and the installation of drainage structures have improved water quality in the area. Additional knowledge regarding protected species' locations, distribution, and habitats has been obtained through numerous surveys and monitoring efforts associated with INS projects. Erosion has been alleviated along some road, and fences have precluded illegal foot and vehicular traffic through environmentally sensitive areas.

3.11.1.3 Future INS Projects

Future projects proposed by INS and USBP include:

- 25 miles of road upgrades west of the Naco Port-Of-Entry,
- 4.0 miles of landing mat fence west of the Naco Port-Of-Entry,
- 3.5 miles of landing mat fence east of the Naco Port-Of-Entry,
- 4.0 miles of stadium lights on the east and west sides of the Naco Port-Of-Entry,
- drainage improvements along the border road, west of Whitewater Draw,
- development of a 60-foot to 300-foot wide enforcement zone along the border in the Naco and Douglas Stations,
- road maintenance and improvements as necessary along the border road, and
- extension of the landing mat fence for 1.3 miles east of the Naco Port-Of-Entry

3.11.1.4 Projects by Other Agencies

Plans by other agencies in the region which would also affect the region's natural and human environment include the road improvements by Arizona Department of Transportation, the commercial truck U.S. Highway 80 bypass and border crossings near Douglas, the Bisbee-Douglas International Airport expansion, and the reactivation of the abandoned Southern Pacific rail line to the west of Naco. With the exception of the proposed new bypass and border crossing near Douglas, the remaining projects would be along existing corridors and/or within previously disturbed sites (e.g., airport). Land use would change along the bypass, and additional wildlife habitat would be lost. The magnitude of these effects would depend upon the length and width of the bypass right-of-way (ROW) and the extant conditions within and adjacent to the ROW.

Reactivation of the rail line and crossing near Naco would result in additional habitat losses, even though the rail would probably be constructed along the existing, but abandoned, line. The tracks were removed in 1975 and the line has begun to revegetate. Reactivation of the line would also increase noise in the immediate vicinity and increase potential health and safety risks due to transportation of hazardous cargo.

3.11.2 No Action Alternative

Approximately 126 acres of wildlife habitat near Naco have been impacted by fence construction, new road construction, road improvements, and the installation of stadium lighting and RVS sites in the past five years. Of these 126 acres, 62 acres are located in Chihuahuan Desert Scrub, 48 acres are located in semi-desert grassland, 11 acres are located in Madrean Evergreen Woodland, and five acres are located in plains grassland.

However, there is no documentation that wildlife populations in the area were significantly impacted by this habitat loss. The lack of significant impacts is expected due to the linear nature of the clearing for road construction, upgrade, and fence and stadium lighting right-of-ways, and, more importantly, due to the highly degraded and disturbed nature of the majority of the project locations. In general, these impacts are not expected to have resulted in a significant reduction in the number of animals whose home range is within or adjacent to the project area, and no change in the overall species composition of the area occurred due to these projects.

Wildlife movement in the project area has probably been impacted by the infrastructure construction and maintenance over the past five years. The greatest effect to movement of small animals generally happens when a disturbance such as road grading, dozing, or fence construction occurs. Mobile animals escaped to areas of similar habitat, while other slow or sedentary animals such as reptiles, amphibians, and small mammals were potentially lost. This displacement and/or reduction in the number of animals did not significantly impact animal communities due to the presence of similar habitat adjacent to the project area. Larger terrestrial wildlife movements in the construction and maintenance areas were not affected due to the short duration of construction activities at each site. Additionally, construction activities were only conducted during daylight hours. No construction activities were conducted during the early morning hours or nighttime hours when wildlife species are most active.

Roads and fences resulted in other indirect impacts. Improved roads have increased the speed at which vehicles travel and increased traffic as well. Higher vehicular speeds could decrease the response time for wildlife to avoid the vehicles, and thus, potentially increased the number of accidental wildlife deaths. Fences serve as a barrier to wildlife species; the magnitude of this effect depends upon the fence design and location. Fences that would act as a physical barrier to wildlife are generally constructed at or near ports-of-entry, which are located within very developed areas. Consequently, such fences do not to have a significant effect on wildlife movement. Vehicle barriers do not impede wildlife movement or remove/alter significant amounts of wildlife habitat.

The No Action Alternative would result in no additional direct effects to the area's resources. No threatened or endangered species or critical habitat would be affected, nor would there be any

adverse effects on cultural resources sites or historic structures that are listed or potentially eligible for listing on the NRHP. Likewise, no additional direct impacts to air quality, water resources, soils, and socioeconomic conditions would occur under this alternative.

Long term indirect cumulative effects have occurred and would continue to occur to the area's natural habitats. However, these effects, both beneficial and adverse, are difficult, if not impossible, to quantify. Reductions in habitat have undoubtedly created inter- and intra-species competition for available food and shelter and, eventually, slight reductions in some wildlife populations. Given the rural nature of Cochise County, 126 acres of altered habitat would be a negligible loss.

The increase in lights along the border also could have produced some long-term cumulative effects, although the magnitude of these effects in some areas is not presently known. Some species, such as insectivorous bats, may benefit from the concentration of insects that would be attracted to the lights. Circadian rhythms of other diurnal species, however, may be disturbed enough that breeding or feeding patterns are skewed, causing synergistic physiological changes. Increased patrol activities would increase the potential for some wildlife specimens to be accidentally hit and killed. Such losses would not be expected to result in significant reductions to the populations.

3.11.3 Proposed Action Alternative

The Proposed Action Alternative would impact approximately 3.5 acres of additional wildlife habitat, the majority of which has been previously disturbed by on-going or past activities. Construction vehicles traveling to and from the proposed sites would result in a slight increase in temporary emissions and particulate matter, but they are short term and would not be expected to add to the cumulative effects.

Positive long-term effects from implementing this project, such as habitat protection, archeological and historic resource protection, and safer work environments for the USBP are expected with the Proposed Action Alternative.

Indirect effects could occur to the vegetation beyond the project area by UDAs attempting to

avoid the area being monitored by the RVS systems. With the Proposed Action Alternative, the proposed RVS systems would allow the USBP to re-allocate agents and equipment, which would lessen any indirect effects to vegetation and cultural resources from illegal traffic trying to avoid areas under surveillance by RVS systems. The magnitude of these effects cannot be determined at the present, since the routes selected by UDAs and smugglers are at their discretion and out of the control of the USBP.

Positive cumulative benefits have resulted from INS activities as well. Additional knowledge regarding threatened or endangered species' locations, distribution, and life requisites has been obtained through surveys and monitoring efforts associated with INS construction projects. Erosion has been alleviated along some roads, and fences have precluded illegal foot and vehicular traffic through environmentally sensitive areas.

Positive cumulative benefits have resulted from INS activities to cultural resources as well. Increased surveillance, patrols, roads, and fences improved the USBP abilities interdict UDAs early. As a result, there has been a reduction in both illegal vehicle and pedestrian traffic across the area. Such illegal traffic can harm cultural resources and be detrimental to the cultural landscape of the area. Archaeological surveys from past INS projects have increased our knowledge of the prehistory and history of the area. Within one mile of the project area INS had completed the intensive survey of over 1,472 acres and has documented 81 different historic and archaeological resources. These surveys not only identified sites that would not normally have been identified, but also provided informative data about site densities, settlement patterns, and site distribution across the area.

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SECTION 4.0 PUBLIC INVOLVEMENT

4.1 AGENCY COORDINATION

This chapter discusses consultation and coordination that has occurred during preparation of the draft and final versions of this document. This coordination included contacts that are made during the development of the Proposed Action Alternative and writing of the EA. Formal and informal coordination were conducted with the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Forest Service
- Natural Resource Conservation Service
- Arizona State Historic Preservation Office
- Arizona Department of Transportation
- Arizona Game and Fish Department (AGFD)
- Arizona Department of Environmental Quality (ADEQ)
- Arizona Department of Agriculture
- Bureau of Land Management (BLM)
- Bureau of Indian Affairs (BIA)
- National Park Service (NPS)

4.2 PUBLIC REVIEW

The draft EA was made available for public review for 30 days, and the notice of availability was published in local newspapers (Exhibit 1). Proof of publication can be found in Appendix B. All correspondence sent or received during the preparation of this EA is also included in Appendix B. One comment letter was received during the comment period for the draft document.

4.3 COMMENTS AND RESPONSES

The following sections address a comment letter from Border Action Network received during the public review of the draft EA.

4.3.1 Border Action Network

Comment 1: The commenter claims that the "EA does not explore all reasonable alternatives. Although two alternatives, other than the 'No Action' and 'Proposed Alternative', are mentioned, they are guickly dismissed without full exploration of their reasonableness".

Response 1: In Section 2.3 of the draft EA, an increased workforce and an increased aerial reconnaissance/operations alternatives were presented and thoroughly discussed; however they were not carried forward for analysis because they do not meet the operational criteria or purpose and need of the proposed action.

Comment 2: The commenter states that the "EA does not adequately address the impacts of connected actions. Although the EA identifies the RVS systems, road improvements and powerlines as part of the proposal, the EA only addresses impacts of the RVS systems".

Response 2: As shown in Table 2-1, powerlines are included in the acres of temporary impact and road improvements are included in the acres of permanent impacts. These impacted acreages are discussed throughout the EA and impacted acreage is referred to collectively as temporary and permanent impacts.

Comment 3: The commenter says that "Although the EA claims that public opinion was one of the criteria in determining the location of the proposed RVS sites, it does not show how this opinion was obtained. There is no evidence of a scoping process for the EA, nor having hearings been held to address this proposal".

Response 3: The public opinion was evaluated during the public comment period and no comment letters were received in opposition or support of the chosen locations. Public opinion is a factor considered when choosing RVS sites; however, only two of the sites are located on land owned by the State of Arizona. The remainder of the sites are owned by private individuals, the Bureau of Land Management (BLM), and the National Park Service (NPS). BLM and NPS employees were consulted at all stages of the site selection process.

Comment 4: Commenter claims that "cumulative impacts are not discussed. The EA identifies past, present, and future projects, but does not discuss the impacts that these projects, as well

as other projects in the area, cumulatively have on the human environment".

Response 4: The EA discusses the cumulative impacts of past projects on wildlife habitat, vegetation communities, wildlife movement, accidental wildlife deaths, aesthetics, air quality, competition, cumulative beneficial impacts of past INS activities, and additional acres impacted by the proposed action. Aspects of the human environment such as socioeconomics (Section 1.5.2) and environmental justice (Section 1.5.3) were discussed in issue topics dismissed from further consideration. These discussions were eliminated because it is believed that the proposed action would have negligible, if any, direct, indirect, or cumulative impacts on these resources. Other aspects of the human environment (e.g., aesthetics, air quality) were included in the cumulative impacts section. The magnitude of future projects cannot be determined at the present time; however, these impacts will be addressed in future NEPA documents.

Comment 5: The commenter states that, "The EA does not address impacts on the environment from an increased presence of Border Patrol in the RVS areas. If the system will detect migrants as the EA suggests and the Border Patrol will respond to apprehend them, then it is logical to infer that the Border Patrol will be traversing the same desert areas as the migrants" The commenter asks "Why is this not addressed?".

Response 5: As stated in Section 2.5.2, the Proposed Action Alternative would significantly reduce the illegal vehicle and foot traffic along the borders thereby protecting physical and biological resources. The forward deployment of RVS systems would aid the USBP in apprehending UDAs and drug smugglers while providing deterrence to these illegal activities. The Proposed Action Alternative would enhance the capability of the USBP to detect illegal activities resulting in a reduced enforcement footprint.

Comment 6: The commenter explains "On page 2-5, the EA states, 'Powerline ROWs were surveyed for sensitive biological and cultural resources in anticipation of power pole installation. Therefore, the installation of power poles will not be discussed further.' Then the comments asks "How can the public provide informed comments on this part of the project if the details and results of the surveys are not shared? How can the public know if impacts from the ROWs are anticipated to be major, moderate, minor, or negligible?

Response 6: The results of the surveys are stated in Section 3.2.1.1 and Section 3.2.1.3 for

Federally protected and State protected species, respectively. Power pole impacts are discussed in Section 2.2.1.

Comment 7: The commenter states "This EA and others in the past consistently assert that construction activities along the border such as this deter illegal immigration, yet cites not authority for this statement. Then asks "What studies exist to show this point to be true?".

Response 7: Research conducted by the Archos Corporation (1999) provided evidence that augmenting an increase in border enforcement hours with border infrastructure improvements significantly enhances the current USBP operational strategy. Concerning the Imperial Beach, Chula Vista, and Brown Field USBP stations in San Diego Sector the study found that:

"...the combination of increased numbers of agents and completion of border infrastructure improvements has resulted in significant decreases in apprehensions."

The study further reported that despite an increase in border enforcement hours of nearly 300% in the El Centro, Yuma and Tucson Sectors apprehensions climbed from 61,700 to over 722,000 during the same period. The research concluded in part that for these three sectors, "Deterrence has not been achieved..." and that, "...Manpower increases alone, without significant border infrastructure changes seem to have little effect."

Additional evidence supporting a "systems" approach was recently outlined in a study conducted by the U.S. Army Corps of Engineers Construction and Engineering Research Laboratory (1999). This study concluded, in part:

"Based upon the findings of this investigation it is concluded that Department of Defense—funded counter-drug fencing projects have been very effective at deterring the flow of illegal drugs and illegal immigrants. An analysis of interdiction and apprehension statistics showed other beneficial trends correlating with the construction of Department of Defense counter-drug fencing, such as a significant decrease in local urban crime.

It is also concluded that a 'systems' approach to barrier fencing offers strong benefits over a single fence. One important benefit is that a more effective barrier system allows the USBP to more efficiently and strategically deploy its agents..."

Comment 8: The commenter states "The EA asserts that no long-term significant impacts have occurred from past construction projects". Then asks "What studies exist to show this point to be true?.

Response 8: The cumulative impacts discussed in the EA are based upon previous NEPA documents (INS 2000a, 2000b, 2001a, 2001b; USACE 1996, 1998a, 1998b, 2000a, 2000b) prepared for these projects. Current investigations of the study region including a review of

previous NEPA documents not indicated long-term significant adverse impacts have occurred.

Comment 9: This commenter states "The EA says that surveys for protected species for all 10 RVS sites were done over a one week period, and that the surveys showed that protected species do not exists in those areas. Surveys over such a short time period cannot accurately show whether a species exists in an area as every species exhibits different behaviors over a period of one day, one month, or a whole year. Furthermore, the surveys do not appear to cover the areas that will be affected by road construction and installation of power poles."

Response 9: The EA states that "no evidence of Federally listed threatened or endangered species were found"; however, it does not preclude the casual use of these areas by these species. Threatened and endangered species surveys are dependent upon the presence of suitable habitat and the disturbed nature of the proposed RVS sites allows the biologists surveying these areas to assess the potential for impacts to threatened and endangered species.

Comment 10: The commenter says, "The BLM Plateau Site is located within the San Pedro Riparian National conservation Area, in which you can find the following protected species: Southwestern Willow Flycatcher, Mexican Spotted Owl, Sonoran Tiger Salamander, Chiricahua Leopard Frog, Huachuca Water Umbel, and Canelo Hills Ladies' Tresses". Then the commenter asks "Why are these species not discussed in more detail? Where is the evidence that U.S. Fish and Wildlife Services have been consulted?".

Response 10: These protected species were surveyed for during the protected species surveys and as stated in Section 3.2.1.1, "no evidence of Federally listed threatened or endangered species were found within the specific project sites"; therefore, they are not discussed in more detail. Correspondence letters to the U.S. Fish and Wildlife Service, Arizona Ecological Services Office are in Appendix B. Additionally, this office was also sent a copy of the draft document.

Comment 11: This commenter says "On page 3-46, the EA states, "Site AZ FF:9:85 has been determined to be not eligible for listing in the NRHP under any criteria" Who made this determination?".

Response 11: This determination was made by TRC, Albuquerque, New Mexico and are consistent with their findings presented in the cultural resources survey report for these site. As stated in the EA, concurrence from the Arizona State Historic Preservation Office would also be necessary, prior to any construction activities.

Comment 12: The commenter states "The EA determines that archaeological sites will not be affected based on surveys done within a three-day period. This does not seem sufficient time to determine the existence of such sites. It then mentions that 25 archeological sites are located within one mile of RVS sites, but assumes that these will not be affected without considering the effects of road construction and powerpole installation."

Response 12: This determination was made by TRC, Albuquerque, New Mexico and are consistent with their findings presented in the cultural resources survey report for these site. Powerline and roadways were surveyed for cultural resources as part of their assessment. Concurrence from the Arizona SHPO and all required Section 106 compliance procedures would be completed prior to initiating construction activities.

Comment 13: The commenter states "The EA describes the proposed alternative as including 9 RVS sites and one alternative site. Yet, in the letters included in the appendix, the number of sites are stated to be 25 and 27."

Response 13: The consultation letters presented in the appendix include sites in the Nogales Station and sites eliminated from further evaluation. The remaining viable sites near Nogales are not being evaluated for installation at this time; however, they will be addressed under a separate NEPA document if they are evaluated. They were also discussed in the cumulative impact analysis.

Comment 14: The commenter asks, "The EA states that negligible impacts to the environment will occur by installing the RVS systems because the sites are already disturbed and little vegetation and no wildlife exist there. However, the EA then states that the systems are necessary to protect the vegetation and wildlife in those same areas from illegal traffic. If the areas are already degraded, what is there to protect?"

Response 14: The descriptions of the vegetation at the proposed RVS sites describe only the

specific area to be potentially impacted (e.g., 30 feet X 30 feet by the construction activities) and not the surrounding vegetation communities. The surrounding vegetation communities at many of the sites supports wildlife habitat which will be protected by the proposed RVS systems.

Comment 15: This commenter assesses, "On page 3-24, the EA states, 'these sites [Montezuma Ranch] are previously disturbed and do not contain suitable habitat for the Mexican Spotted Owl". Then asks "How can this be when the EA also states that the sites fall within an area designated as critical habitat for the species?"

Response 15: The Montezuma Ranch sites are located near an abandoned ranch house with no vegetation that is suitable for Mexican Spotted Owl. As described in Table 3-1, Mexican spotted owls nest in canyons and dense forests with multi-layered foliage structure. This site does not provide any of the primary constituent elements required by the Mexican spotted owl.

Exhibit 1

NOTICE OF AVAILABILITY

ENVIRONMENTAL ASSESSMENT
For the Installation and Operation of
Nine Remote Video Surveillance Systems in the
Tucson Sector, Cochise County, Arizona

The public is hereby notified of the availability of the Draft Environmental Assessment (EA) for the installation and operation of nine Remote Video Surveillance (RVS) sites along the U.S.-Mexico Border in Cochise County, Arizona. This EA addresses related permanent road improvements, temporary road improvements, and the installation of powerlines from adjacent power grids. The Draft EA will be available for review at the Douglas Library, 560 E. 10th Street, Douglas, Arizona 85607; Sierra Vista Public Library, 2600 E. Tacoma, Sierra Vista, Arizona 85635; and the Tucson-Pima Public Library, 101 N. Stone, Tucson, Arizona 85701.

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SECTION 6.0 LIST OF PREPARERS

6.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

Name	Agency/Organization	Discipline/Expertise	Experience	Role In Preparing EA
Kevin Feeney	INS, Headquarters	Environmental Planning	20 years, EIS/EAs for Federal projects	INS Environmental Office Program Manager
Charles Parsons	INS, Western Region	Geology	25 years of geotechnical and environmental related studies	Program Manager, EA Review
Patience Patterson	USACE, Ft. Worth District	Archaeology	29 years Professional Archaeologist/Cultural Resource Manager	EA review and Section 106 coordination
Charles McGregor	USACE, Ft. Worth District	Chemistry	5 years technical review of NEPA documents	Technical manager, EA review and coordination
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	23 years NEPA and related studies	EA Review
Suna Adam Knaus	Gulf South Research Corporation	Biology/Ecology	14 years NEPA and related studies	EA Review
John Lindemuth	Gulf South Research Corporation	Archaeology/Project Archaeologist	11 years archaeological studies	Cultural resources
David Alford	Gulf South Research Corporation	GIS/Graphics	3 years GIS analysis	GIS and Graphics
Mike Schulze	Gulf South Research Corporation	Environmental Studies	5 years Natural Resource and NEPA Studies	Project Manager, Agency Coordination, EA preparation, and field surveys
Donna Marie Bankston	Gulf South Research Corporation	Forest Management	1 year of Natural Resources and NEPA Studies	EA preparation and field surveys

List of Preparers continued

Name	Agency/Organization	Discipline/Expertise	Experience	Role In Preparing EA
Jim Malusa	Private Contractor	Botanical Surveys	22 years Botanical Research and Surveys	Field surveys
Howard Higgins, Ph.D.	TRC-Albuquerque	Archaeology/CRM	23 years of archaeological experience, 20 years in supervisory role.	Principal Investigator
Victoria D. Vargas, M.A., R.P.A.	TRC-Albuquerque	Archaeology/CRM	12 years of archaeological experience, 8 years in CRM supervisory role.	Cultural Resources Survey Report co-Author. Project management.
Jeffrey Hathaway, M.A.	TRC-Albuquerque	Archaeology/CRM	12 years of archaeological experience, 5 years in CRM supervisory role.	Archaeological Field Technician. Report co- author.
Brian Rooney, B.A.	TRC-Albuquerque	Archaeology/CRM	10 years of archaeological experience.	Archaeological Field Technician
Stephen Yost, A.B.D.	TRC-Albuquerque	Archaeology/CRM	7 years of archaeological experience, 4 years in supervisory role.	Project Manager. Report co- author.

APPENDIX A
COMMON WILDLIFE IN THE PROJECT AREA

Common Name	Scientific Name
Plants	
Alkali Sacaton	Sporobolis airoides
all-thorn	Koberlinia spinosa
Arizona cudweed	Gnaphalium arizonicum
Arizona desert holly	Perezia nana
banana yucca	Yucca baccata
Bermuda grass	Cynodon dactylon
blue grama	Bouteloua gracilis
broom snakeweed	Gutierrezia sarothrae
buckwheat	Eriogonum sp.
bulrush	Scirpus sp.
calabazilla (buffalo gourd)	Cucurbuta foetidissima
cane colla	Opuntia spinosior
canyon ragweed	Ambrosia ambrosioides
common cattail	Typha latifolia
common cocklebur	Xanthium strumarium
common sunflower	Helianthus annuus
creosote bush	Larrea tridentata
crowded rayweed (mariola)	Parthenium confertum
curly mesquite grass	Hilaria belangeri
deergrass	Muhlenbergia rigens
desert broom	Baccharis sarothroides
desert senna	Cassia covesii
desert sumac	Rhus microphylla
desert thorn	Lycium macrodon
desert willow	Condalia lycioides
emory oak	Quercus emoryi
Engelmann's prickly pear	Opuntia phaeacantha var. discata
fairy duster	Calliandra eriophylla
four-wing saltbush	Atriplex canescens
Fremont cottonwood	Populus fremontii
giant ragweed	Ambrosia trifida
golden rabbit brush	Chrysothamnus nauseosus
goodding willow	Salix gooddingii
groundsel	Senecio sp.
Johnson grass	Sorghum halepense
Lehmann's lovegrass	Eragrostis lehmanniana
longleaf ephedra (Mormon tea)	Ephedra trifurca
mohave prickly pear	Opuntia erinacea var. erinacea
netleaf hackberry	Celtis reticulata
ocotilla	Fouquieria slendens
Palmer's agave	Agave palmeri
prairie zinnia	Zinnia grandiflora
rabbit-foot grass	Polypogon monspeliensis
purple prickly pear	Opuntia violacea var. santa-rita

ola iberica
ola iberica
robolis wrightii
ıra meteloides
arix pentandra
rcus sp.
eloua curtipendula
num elaeagnifolium
ca elata
/lirion wheeleri
ochloa sp.
rensia cernua
um sp.
ida sp.
dium thurberi
opis velutina
opis glandulosa
dium montanum
ndus saponaria var. drummondii
cia constricta
nnerpes formicivorus
a americana
o sparverius
lus migratorius
s americana
pte anna
mba fasciata
ndo rustica
o bellii
omanes bewickii
ilochus alexandri
ornis nigricans
optila caerulea
pornis clemenciae
hagus cyanocephalus
ella breweri
is wollweberi
anthus latirostris
sphorus platycerus
rchus tyrannulus
pylorhynchus brunneicapillus
nnus vociferans
rus cryptoleucus
s cyanopters

Common Name	Scientific Name
Birds cont.	•
cliff swallow	Petrochelidon pyrrhonota
common poorwill	Phalaenoptilus nuttallii
common raven	Corvus corax
common snipe	Capella gallinago
curve-billed thrasher	Toxostoma curvirostre
dusky-capped flycatcher	Myiarchus tuberculifer
dusky flycatcher	Empidonax oberholseri
eared grebe	Podiceps nigricollis
eastern meadowlark	Sturnella magna
European starling	Sturnus vulgaris
Gila woodpecker	Melanerpes uropygialis
greater roadrunner	Geococcyx californianus
Hammond's flycatcher	Empidonax hammondii
hermit thrush	Catharus guttatus
horned lark	Eremophila alpestris
house sparrow	Passer domesticus
house wren	Troglodytes aedon
killdeer	Charadrius vociferus
ladder-backed woodpecker	Dendrocopus nuttallii
lark bunting	Calamospiza melanocorys
lark sparrow	Chondestes grammacus
least sandpiper	Calidris minutilla
long-billed dowitcher	Limnodromus scolopaceus
magnificent hummingbird	Eugenes fulgens
northern flicker	Colaptes auratus
northern harrier	Circus cyaneus
northern mockingbird	Mimus polyglottos
northern rough-winged swallow	Stelgidopteryx ruficollis
northern shovelor	Anas clypeata
painted redstart	Myioborus pitus
purple martin	Progne subis
pygmy nuthatch	Sitta pygmaea
red-tailed hawk	Buteo jamaicensis
red-winged blackbird	Agelaius phoeniceus
rock wren	Salpinctes obsoletus
rock dove	Columba livia
ruby-crowned kinglet	Regulus calendula
Say's phoebe	Sayornis saya
sharp-shinned hawk	Accipiter striatus
spotted sandpiper	Actitis macularia
Steller's jay	Cyanocitta stelleri
Swainson's hawk	Buteo swainsoni
tree swallow	Tachycineta bicolor
turkey vulture	Cathartes aura
vermillion flycatcher	Pyrocephalus rubinus

Common Name	Scientific Name
Birds cont.	•
vesper sparrow	Pooecetus gramineus
violet-green swallow	Tachycineta thalassina
water pipet	Anthus spinoletta
western bluebird	Sialia mexicana
western flycatcher	Empidonax difficilis
western kingbird	Tyrannus verticalis
western sandpiper	Ćalidris mauri
western tanager	Piranga ludoviciana
western wood-pewee	Contopus sordidulus
whip-poor-will	Caprimulgus vociferus
white-crowned sparrow	Zonotrichia leucophrys
Mammals	zenementa reaceptinye
American free-tailed bat	Tadarida brasiliensis mexicana
antelope jackrabbit	Lepus alleni
Arizona cotton rat	Sigmodon arizonae cienegae
badger	Taxidea taxus berlandieri
Bailey's pocket mouse	Perognathus baileyi
banner-tailed kangaroo rat	Dipodomys spectabilis spectabilis
big brown bat	Eptesicus fuscus
black-tailed jackrabbit	Lepus californicus
bobcat	Felis rufus
Botta's pocket gopher	Thomomys bottae
brush mouse	Peromyscus boylii rowleyi
cactus mouse	Peromyscus eremicus
canyon mouse	Peromyscus eremicus
California leaf-nosed bat	Macrotus californicus
California myotis	Myotis californicus
cliff chipmunk	Eutamias dorsalis dorsalis
cave myotis	Myotis velifer velifer
coyote	Canis latrans
deer mouse	Peromyscus maniculatus sonoriensis
desert cottontail	Sylvilagus auduboni minor
desert pocket mouse	Perognathus penicillatus
desert shrew	Notiosorex crawfordi
eastern cottontail	Sylvilagus sfloridanus holzneri
fringed myotis	Myotis thysanodes thysanodes
fulvous cotton rat	Sigmodon fulviventer minimus
fulvous harvest mouse	Reithrodontomys megalotis megalotis
gray fox	Urocyon cinereoargenteus
Gunnison's prairie dog	Cynomys gunnisoni zuniensis
hairy-tailed bat	Lasiurus borealis
Harris' antelope squirrel	Ammospermophilus harrisii
hispid pocket mouse	Perognathus hispidus conditi
hoary bat	Lasiurus cinereus
hog-nosed skunk	Conepatus mesoleucus venaticus

Common Name	Scientific Name
Mammals cont.	
hooded skunk	Mephitis macroura milleri
javelina	Tayassu tajacu sonoriensis
kit fox	Vulpes macrotis
long-legged myotis	Myotis volans interior
long-tailed weasel	Mustela frenata neomexicana
Merriam's kangaroo rat	Dipodomys merriami
Mexican fox squirrel	Sciurus nayaritensis chiricahuae
Mexican long-tongued bat	Choeronycteris mexicana
mountain lion	Felis concolor
mule deer	Odocoileus hemionus crooki
northern grasshopper mouse	Onychomys leucogaster ruidosae
Ord's kangaroo rat	Dipodomys ordii
pallid bat	Antrozous pallidus
plains harvest mouse	Reithrodontomys montanus
pocketed free-tailed bat	Tadarida femorosacca
raccoon	Procyon lotor pallidus
ringtail	Bassaricus astutus
rock squirrel	Spermophilus variegatus grammurus
rock pocket mouse	Perognathus intermedius
round-tailed ground squirrel	Spermophilus tereticaudus
Lesser long-nosed bat	Leptonycteris sanborni
silky pocket mouse	Perognathus flavus flavus
silver-haired bat	Lasionycteris noctivigans
small-footed myotis	Myotis leibil melanorhinus
southern grasshopper mouse	Onychomys torridus torridus
southern pocket gopher	Thomomys umbrinus intermedius
southern yellow bat	Lasiurus ega xanthiuns
southwestern myotis	Myotis auriculus apache
spotted ground squirrel	Spermophilus spilosoma
striped skunk	Mephitis mephitis
Townsend's big-eared bat	Plecotus townsendii
western harvest mouse	Reithrodontomys megalotis megalotis
western pipistrelle	Pipistrellus hesperus
western spotted skunk	Spilogale gracilis leucoparia
white-footed mouse	Peromyscus leucopus arizonae
white-tailed deer	Odocoileus virginianus couesi
white-throated wood rat	Neotoma albigula
yellow-nosed cotton rat	Sigmodon ochrognathus
Yuma myotis	Myotis yumanensis
Amphibians	
bullfrog	Rana catesbeiana
canyon treefrog	Hyla arenicolor
Couch's spadefoot toad	Scaphiopus couchi
great basin spadefoot toad	Scaphiopus intermontanus

Common Name	Scientific Name
Amphibians cont.	
great plains toad	Bufo cognatus
leopard frog	Rana blairi
tiger salamander	Ambystoma tigrinum
western green toad	Bufo debilis insidior
western spadefoot toad	Scaphiopus hammondii
Reptiles	
Arizona whiptail	Cnemidophorus inornatus arizonae
black-tailed rattlesnake	Crotalus molossus
bull snake	Pituophis melanoleucus sayi
canyon spotted whiptail	Cnemidophorus burti
chihuahuan spotted whiptail	Cnemidophorus exsanguis
clark spiny lizard	Sceloporus clarkii
coachwhip	Masticophis flagellum
common kingsnake	Lampropeltis getulus
desert box turtle	Terrapene ornata luteola
desert-grassland whiptail	Cnemidophorus uniparens
glossy snake	Arizona elegans
Long-nosed snake	Rhinocheilus lecontei
Madrean alligator lizard	Ilgaria kingii
Mexican hognose snake	Heterodon nasicus bennerlyi
Mojave rattlesnake	Crotalus scutulatus
mountain spiny lizard	Sceloporus jarrovi
night snake	Hypsiglena torquata
rock rattlesnake	Crotalus lepidus
side-blotched lizard	Uta stansburiana
Sonoran mountain kingsnake	Lampropeltis pyromelana
southwestern earless lizard	Holbrookia texana scitula
striped plateau lizard	Sceloporus virgatus
tree lizard	Urosaurus ornatus
western-banded gecko	Coleonyx variegatus
western box turtle	Terrapene ornata
western diamondback	Crotalus atrox
western hooknose snake	Ficimia cana
western patch-nosed snake	Salvadora hexalepis
western whiptail	Cnemidophorus tigris

Sources: Bernard and Brown 1978; Lane 1988; Lowe and Holm 1992; Natural Resources Planning Team 1986; Phillips et al. 1964; U.S. Department of the Interior 1989; U.S. Army Corps of Engineers 1990

APPENDIX B CORRESPONDENCE



DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF:

March 4, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment (EA) for the Installation and Operation of Remote Video Surveillance (RVS) systems in the Tucson Sector of the U.S. Border Patrol (USBP)

U.S. Fish and Wildlife Service Arizona Ecological Services Field Office ATTN: David Harlow, Field Supervisor 2321 West Royal Palm Road, Suite 103 Phoenix, AZ 85021-4915

Dear Mr. Harlow,

The U.S. Army Corps of Engineers (USACE), Fort Worth District, is acting on behave of the U.S. Immigration and Naturalization Service (INS) in preparing an Environmental Assessment (EA) for the installation and operation of Remote Video Surveillance (RVS) systems for the Tucson Sector of the U.S. Border Patrol (USBP). This EA will be prepared to address the installation, operation, and maintenance of 25 RVS systems sites near the cities of Naco and Douglas, Cochise County and Nogales, Santa Cruz County, Arizona. The proposed action also includes the upgrade of existing access roads and the construction of two new access roads.

We are currently in the process of gathering the most current information available regarding Federally listed species potentially occurring within Cochise and Santa Cruz Counties. The USACE respectfully requests that your agency provide a list of the protected species of these counties along with a description of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species, etc.) that you believe may be affected by the proposed INS activities.

We intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Your prompt attention to this request would be greatly appreciated. If you have any questions, please feel free to contact Mr. Charles McGregor at (817) 886-1708.

Sincerely,

Planning, Environmental and

Regulatory Division



DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300
March 4, 2002

REPLY TO ATTENTION OF:

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment (EA) for the Installation and Operation of Remote Video Surveillance (RVS) systems in the Tucson Sector of the U.S. Border Patrol (USBP)

Arizona Game and Fish Department
Habitat Branch – Project Evaluation Program
ATTN: Mr. Bob Broscheid, Project Evaluation Program Supervisor
2221 West Greenway Road
Phoenix, AZ 85023

Dear Mr. Broscheid,

The U.S. Army Corps of Engineers (USACE), Fort Worth District, is acting on behave of the U.S. Immigration and Naturalization Service (INS) in preparing an Environmental Assessment (EA) for the installation and operation of Remote Video Surveillance (RVS) systems for the Tucson Sector of the U.S. Border Patrol (USBP). This EA will be prepared to address the installation, operation, and maintenance of 25 RVS systems sites near the cities of Naco and Douglas, Cochise County and Nogales, Santa Cruz County, Arizona. The proposed action also includes the upgrade of existing access roads and the construction of two new access roads.

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We intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Your prompt attention to this request would be greatly appreciated. If you have any questions, please feel free to contact Mr. Charles McGregor at (817) 886-1708.

Sincerely,

William Fickel, Jr

Planning, Environmental and

Regulatory Division



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

UL PER-E

In Reply Refer to:

AESO/SE 2-21-02-I-017

March 12, 2002

Department of the Army
Fort Worth District, Corps of Engineers
Mr. William Fickel, Jr.
P. O. Box 17300
Fort Worth, Texas 76102-0300

RE: Installation and Operation of Remote Video Surveillance (RVS) Systems for the Tucson Sector of the U.S. Border Patrol (USBP).

Dear Mr. Fickel:

This letter responds to your March 4, 2002, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Cochise and Santa Cruz Counties). The enclosed lists may include candidate species as well. We hope the enclosed county lists of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-02-I-017.

The enclosed list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed list is the Code of Federal Regulations (CFR) citation for each list and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered

1)LISTED

TOTAL= 21

NAME: CANELO HILLS LADIES' TRESSES

SPIRANTHES DELITESCENS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE).

FLOWER: STALK 50 CM TALL, MAY CONTAIN 40 WHITE FLOWERS

SPIRALLY ARRANGED ON THE FLOWERING STALK.

ELEVATION

RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: COCHISE PINCUSHION CACTUS

CORYPHANTHA ROBBINSORUM

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 952, 1-9-1986

DESCRIPTION: A SMALL UNBRANCHED CACTUS WITH NO CENTRAL SPINES AND 11-17

WHITE RADIAL SPINES. THE BELL-SHAPED FLOWERS ARE BORNE ON

THE ENDS OF TUBERCULES (Protrusions). FLOWERS: BELL SHAPED,

ELEVATION

FT.

PALE YELLOW-GREEN. FRUITS: ORANGE-RED TO RED RANGE: >4200

COUNTIES: COCHISE AND SONORA, MEXICO

HABITAT: SEMIDESERT GRASSLAND WITH SMALL SHRUBS, AGAVE, OTHER CACTI, AND GRAMA GRASS.

- GROWS ON GRAY LIMESTONE HILLS.

NAME: HUACHUCA WATER UMBEL

LILAEOPSIS SCHAFFNERIANA SSP RECURVA

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY

(UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW

FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10

FLOWERED UMBELS ARISE FROM ROOT NODES.

ELEVATION

RANGE: 3500-6500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO, WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 37441)

COCHISE

NAME: OCELOT

LEOPARDUS (=FELIS) PARDALIS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 47 FR 31670; 07-21-82

DESCRIPTION: MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH

OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES

RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS

HEAVILY STREAKED THAN THE BACK AND SIDES.

ELEVATION

RANGE: <8000

FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: HUMID TROPICAL & SUB-TROPICAL FORESTS, SAVANNAHS, AND SEMI-ARID THORNSCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS, SECOND-GROWTH WOODLAND, AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.

NAME: BEAUTIFUL SHINER

CYPRINELLA FORMOSA

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 8-31-1984

DESCRIPTION: SMALL (2.5 INCHES) SHINY MINNOW AND VERY SIMILAR TO RED SHINER.

MALES COLORFUL DURING BREEDING (YELLOW-ORANGE OR ORANGE

ON CAUDAL AND LOWER FINS AND BLUISH BODY.

ELEVATION

RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MEDIUM SIZED STREAMS AND PONDS WITH SAND, GRAVEL, AND ROCK BOTTOMS.

VIRTUALLY EXTIRPATED IN THE UNITED STATES, WITH THE EXCEPTION OF A FEW ISOLATED POPULATIONS ON NATIONAL WILDLIFE REFUGES AND IN MEXICO. SAME CRITICAL HABITAT AS YAQUI CHUB AND CATFISH (SEE 49 FR 34490, 08-31-1984).

NAME: LOACH MINNOW

TIAROGA COBITIS

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 39468, 10-28-1986;

59 FR 10898, 03-08-1994;

DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL

FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS

ELEVATION

RANGE: <8000

FT.

COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, *YAVAPAI, *COCHISE, *PIMA

HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLE& GRAVEL. RECURRENT FLOODING AND NATURAL HYDROGRAPH IMPORTANT.

PRESENTLY FOUND IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST-WEST-AND MIDDLE FORKS OF THE GILA RIVER, EAGLE CREEK, EAST FORK. BLACK RIVER, AND THE MAINSTEM UPPER GILA RIVER. CRTITICAL HABITAT WAS REMOVED IN MARCH 1998; BUT RE-PROPOSED DEC 1999 AND FINALIZED APRIL 2000. SPECIES ALSO FOUND IN CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. *COUNTIES WITH CRITICAL HABITAT PRESENTLY CONTAIN NO KNOWN EXISTING POPULATIONS OF LOACH MINNOW.

COCHISE

NAME: YAQUI TOPMINNOW

POECILIOPSIS OCCIDENTALIS SONORIENSIS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES) TOPMINNOW GUPPY-LIKE, LIVE BEARING, LACKING

DARK SPOTS. BREEDING MALES JET BLACK WITH YELLOW FINS.

ELEVATION

RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MODERATE SIZED STREAMS, SPRINGS, & CIENEGAS GENERALLY IN SHALLOWS

NAME: BALD EAGLE

HALIAEETUS LEUCOCEPHALUS

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38": WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION

RANGE: VARIES

FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

NAME: BROWN PELICAN

PELECANUS OCCIDENTALIS CALIFORNICUS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35

FR 18320, 12-02-70

DESCRIPTION: LARGE DARK GRAY-BROWN WATER BIRD WITH A POUCH UNDERNEATH LONG BILL AND WEBBED FEET. ADULTS HAVE A WHITE HEAD AND

NECK, BROWNISH BLACK BREAST, AND SILVER GRAY UPPER PARTS.

ELEVATION

RANGE: VARIES

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: COASTAL LAND AND ISLANDS; ARIZONA LAKES AND RIVERS

SUBSPECIES IS FOUND ON PACIFIC COAST AND IS ENDANGERED DUE TO PESTICIDES. IT IS AN UNCOMMON TRANSIENT IN ARIZONA ON MANY ARIZONA LAKES AND RIVERS. INDIVIDUALS WANDER UP FROM MEXICO IN SUMMER AND FALL. NO BREEDING RECORDS IN ARIZONA.

COCHISE

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: 10/11/2001

NAME: SOUTHWESTERN WILLOW FLYCATCHER

EMPIDONAX TRAILLII EXTIMUS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS. WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH

BELLY, TWO WINGBARS VISIBLE, EYE-RING FAINT OR ABSENT.

ELEVATION

RANGE: <8500

FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM.

YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER, DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT WAS SET ASIDE BY THE 10TH CIRCUIT COURT OF APPEALS (5/17/01).

NAME: WHOOPING CRANE

GRUS AMERICANA

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 32 FR 4001, 63-11-1967; 43

FR 20938, 05-15-78

DESCRIPTION: TALLEST AMERICAN BIRD (UP TO 5 FEET) SNOWY WHITE, LONG NECK

AND LEGS, BLACK WING TIPS, RED CROWN, AND BLACK WEDGE

ELEVATION

SHAPED PATCH OF FETHERS BEHIND ITS EYE.

RANGE: 4500 FT.

COUNTIES: COCHISE

HABITAT: MARSHES, PRAIRIES, RIVER BOTTOMS

BIRDS IN THE ROCKY MOUNTAIN POPULATION ARE OCCASIONAL VISITORS IN ARIZONA DURING MIGRATION. USUALLY NEAR WILCOX PLAYA.

NAME: SONORA TIGER SALAMANDER

AMBYSTOMA TIGRINUM STEBBINSI

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: 2.6 TO 4.9" SNOUT-VENT LENGTH WITH LIGHT-COLORED BANDS ON A

DARK BACKGROUND. AQUATIC LARVAE ARE UNIFORM DARK COLOR

WITH PLUME-LIKE GILLS AND TAIN FINS.

ELEVATION

RANGE: 4000-6300 FT.

COUNTIES: SANTA CRUZ, COCHISE

HABITAT: STOCK TANKS AND IMPOUNDED CIENEGAS IN SAN RAFAEL VALLEY, HUACHUCA MOUNTAINS

ALSO OCCURS IN THE FOOTHILLS OF THE EAST SLOPE OF THE PATAGONIA AND HUACHUCA MOUNTAINS. POPULATIONS ALSO ON FORT HUACHUCA.

3) CANDIDATE

TOTAL=5

NAME: LEMMON FLEABANE

ERIGERON LEMMONII

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: A PROSTRATE PERENNIAL IN THE SUNFLOWER FAMILY. STEMS AND LEAVES ARE DENSELY HAIRY. FLOWERS LOOK LIKE SMALL DELICATE

DAISIES, WITH WHITE TO LIGHT PURPLE OUTER PETALS AND YELLOW

INNER PETALS.

ELEVATION

RANGE: 1500-6000 FT.

COUNTIES: COCHISE

HABITAT: GROWS IN DENSE CLUMPS IN CREVICES, LEDGES, AND BOULDERS IN CANYON BOTTOMS IN PINE-OAK WOODLAND

ONE SITE ON FORT HUACHUCA MILITARY RESERVATION

NAME: BLACK-TAILED PRAIRIE DOG

CYNOMYS LUDOVICIANUS

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: SMALL, STOUT GROUND SQUIRRELS. TOTAL LENGTH OF ADULT 14-17

INCHES: ABOUT 1-3 LBS. INDIVIDUALS IN MIXED COLORS OF BROWN.

BLACK, GRAY, AND WHITE, BLACK-TIPPED TAIL, A SOCIAL ANIMAL LIVING IN AGGREGATIONS CALLED TOWNS, COLONIES, OR VILLAGES.

ELEVATION

RANGE: APPROX. 5.FT.

COUNTIES: COCHISE, GRAHAM, AND GREENLEE

HABITAT: IN BURROWS IN PLAINS AND GRASSLAND HABITATS.

SPECIES IS CURRENTLY EXTIRPATED FROM THE STATE, BUT CONSERVATION EFFORTS ARE UNDERWAY. TWELVE-MONTH PETITION FINDING PUBLISHED 2/4/00. EXTIRPATED FROM AZ AROUND 1938. REINTRODUCTION ATTEMPTED IN 1972, BUT FAILED.

NAME: GILA CHUB

GILA INTERMEDIA

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: DEEP COMPRESSED BODY, FLAT HEAD. DARK OLIVE-GRAY COLOR

ABOVE, SILVER SIDES. ENDEMIC TO GILA RIVER BASIN.

ELEVATION

RANGE: 2000 - 3500 FT.

COUNTIES: SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE, GRAHAM, YAVAPAI

HABITAT: POOLS, SPRINGS, CIENEGAS, AND STREAMS

MULTIPLE PRIVATE LANDOWERS, INCLUDING THE NATURE CONSERVANCY, THE AUDUBON SOCIETY. AND OTHERS, ALSO FT, HUACHUCA, SPECIES ALSO FOUND IN SONORA, MEXICO.

CONSERVATION AGREEMENT

TOTAL=1

NAME: RAMSEY CANYON LEOPARD FROG

RANA SUBAQUAVOCALIS

STATUS: CONSERVATION AGREEMENT CRITICAL HAB No RECOVERY PLAN: No CFR; 59 FR 58996

DESCRIPTION: BROWN OR GREEN FROG, 2.5 TO 4 INCHES LONG; SPOTS ROUNDED WITH LIGHT BORDERS; DORSOLATERAL FOLDS ARE INTERRUPTED

POSTERIORLY AND DEFLECTED MEDIALLY; YELLOWISH PIGMENTATION ELEVATION

ON THE GROIN WHICH MAY EXTEND INTO THE POSTERIOR VENTER

RANGE: 5,000 FT FT.

COUNTIES: COCHISE

HABITAT: ARTIFICIAL PONDS IN TINKER, BROWN, AND RAMSEY CANYONS ON THE EAST SLOPE OF THE HUACHUCA MOUNTAINS.

CONSERVATION AGREEMENT BETWEEN THE SERVICE, ARIZONA GAME AND FISH DEPARTMENT, THE NATURE CONSERVANCY, BUREAU OF LAND MANAGEMENT, CORONADO NATIONAL FOREST, THE US ARMY INTELLIGENCE CENTER AND FORT HUACHUCA, AND A PRIVATE LANDOWNER WAS SIGNED IN AUGUST 1996. SPECIES ALSO OCCURS ON FORT HUACHUCA.

1)LISTED

TOTAL= 16

NAME: CANELO HILLS LADIES' TRESSES

SPIRANTHES DELITESCENS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE).

FLOWER: STALK 50 CM TALL, MAY CONTAIN 40 WHITE FLOWERS

SPIRALLY ARRANGED ON THE FLOWERING STALK.

ELEVATION

RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: HUACHUCA WATER UMBEL

LILAEOPSIS SCHAFFNERIANA ssp RECURVA

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY

(UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW

FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10

ELEVATION

FLOWERED UMBELS ARISE FROM ROOT NODES.

RANGE: 3500-6500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO, WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 37441)

NAME: PIMA PINEAPPLE CACTUS

CORYPHANTHA SCHEERI ROBUSTISPINA

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 57 FR 14374, 04-20-1992

DESCRIPTION: HEMISHPERICAL STEMS 4-7 INCHES TALL 3-4 INCHES DIAMETER.

CENTRAL SPINE 1 INCH LONG STRAW COLORED HOOKED

SURROUNDED BY 6-15 RADIAL SPINES. FLOWER: YELLOW SALMON OR

RARELY WHITE NARROW FLORAL TUBE.

ELEVATION

RANGE: 2300-5000 FT.

COUNTIES: PIMA, SANTA CRUZ

HABITAT: SONORAN DESERTSCRUB OR SEMI-DESERT GRASSLAND COMMUNITIES

OCCURS IN ALLUVIAL VALLEYS OR ON HILLSIDES IN ROCKY TO SANDY OR SILTY SOILS. THIS SPECIE CAN BE CONFUSED WITH JUVENILLE BARREL CACTUS (FEROCACTUS). HOWEVER, THE SPINES OF THE LATER ARE FLATTENED, IN CONTRAST WITH THE ROUND CROSS-SECTION OF THE CORYPHANTHA SPINES. ALSO THE AREOLES (SPINE CLUSTERS) OF CORYPHANTHA ARE ON TUBERCULES (BUMPS), WHILE THE AREOLES OF FEROCACTUS ARE ON RIDGES (RIBS). 80-90% OF INDIVIDUALS ON STATE AND PRIVATE LAND.

NAME: DESERT PUPFISH

CYPRINODON MACULARIUS

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 10842, 03-31-1986

DESCRIPTION: SMALL (2 INCHES) SMOOTHLY ROUNDED BODY SHAPE WITH NARROW

VERTICAL BARS ON THE SIDES. BREEDING MALES BLUE ON HEAD AND SIDES WITH YELLOW ON TAIL. FEMALES & JUVENILES TAN TO OLIVE

COLORED BACK AND SILVERY SIDES.

ELEVATION

RANGE: <5000

FT ·

COUNTIES: LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL, YAVAPAI, SANTA CRUZ

HABITAT: SHALLOW SPRINGS, SMALL STREAMS, AND MARSHES. TOLERATES SALINE & WARM WATER

CRITICAL HABITAT INCLUDES QUITOBAQUITO SPRING, PIMA COUNTY, PORTIONS OF SAN FELIPE CREEK, CARRIZO WASH, AND FISH CREEK WASH, IMPERIAL COUNTY, CALIFORNIA. TWO SUBSPECIES ARE RECOGNIZED: DESERT PUPFISH (C. m. macularis) AND QUITOBAQUITO PUPFISH (C. m. eremus).

NAME: GILA TOPMINNOW

POECILIOPSIS OCCIDENTALIS OCCIDENTALIS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES), GUPPY-LIKE, LIVE BEARING, LACKS DARK SPOTS ON

ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.

ELEVATION

RANGE: <4500

FT.

COUNTIES: GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ

HABITAT: SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWS

SPECIES HISTORICALLY OCCURRED IN BACKWATERS OF LARGE RIVERS BUT IS CURRENTLY ISOLATED TO SMALL. STREAMS AND SPRINGS

NAME: SONORA CHUB

GILA DITAENIA

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 16042, 04-30-1986

DESCRIPTION: MINNOW (<5 INCHES LONG) MODERATELY CHUBBY, DARK-COLORED FISH WITH TWO PROMINENT BLACK LATERAL BANDS ON THE SIDES

AND A DARK OVAL SPOT AT THE BASE OF THE TAIL. BREEDING MALES

ELEVATION

HAVE RED LOWER FINS AND A ORANGE BELLY

FT. RANGE: 3900

COUNTIES: SANTA CRUZ

HABITAT: PERENNIAL & INTERMITTENT SMALL TO MODERATE STREAMS WITH BOULDERS & CLIFFS

CRITICAL HABITAT IN SYCAMORE CREEK (SANTA CRUZ COUNTY). YANK SPRING TO INTERNATIONAL BORDER, 2.0 Km OF PENASCO CREEK, AND LOWER HALF OF UNNAMED STREAM ENTERING SYSCAMORE CREEK ABOUT 2.4 Km DOWNSTREAM FROM YANKS SPRING. SPECIES EXTENDS INTO MEXICO (ALTAR & MAGDELENA RIVERS).

NAME: MEXICAN SPOTTED OWL

STRIX OCCIDENTALIS LUCIDA

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91: 66

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND

FR 8530, 2/1/01

HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION

RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA. PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE. IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED. CRITICAL HABITAT WAS REMOVED IN 1998 BUT RE-PROPOSED IN JULY 2000 AND FINALIZED IN FEB 2001 FOR APACHE, COCHISE, COCONINO, GRAHAM, MOHAVE, PIMA COUNTIES; ALSO IN NEW MEXICO, UTAH, AND COLORADO.

NAME: NORTHERN APLOMADO FALCON

FALCO FEMORALIS SEPTENTRIONALIS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 6686, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS, GRAY BACK, LONG BANDED TAIL, AND A DISTINCT BLACK AND WHITE FACIAL PATTERN. SMALLER THAN

PEREGRINE LARGER THAN KESTREL. BREEDS BETWEEN MARCH-JUNE ELEVATION

RANGE: 3500-9000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

NAME: SOUTHWESTERN WILLOW FLYCATCHER

EMPIDONAX TRAILLII EXTIMUS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS. WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH

BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE:

FT <8500

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT WAS SET ASIDE BY THE 10TH CIRCUIT COURT OF APPEALS (5/17/01).

2) PROPOSED

TOTAL=1

NAME: CHIRICAHUA LEOPARD FROG

RANA CHIRICAHUENSIS

STATUS: PROPOSED

CRITICAL HAB No RECOVERY PLAN: No CFR: 65 FR 37343, 6-14-2000

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE

INTERRUPTED AND DEFLECTED MEDIALLY, AND A CALL GIVEN OUT OF

WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD

ELEVATION

RANGE: 3300-8900 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE MOSTLY FREE FROM INTRODUCED FISH, CRAYFISH, AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER MAY BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES.

THE STATE OF ARIZONA



GAME AND FISH DEPARTMENT

2221 West Greenway Road, Phoenix, AZ 85023-4399 (602) 942-3000 • www.azgfd.com

GOVERNOR JANE DEE HULL COMMISSIONERS CHAIRMAN, MICHAEL M. GOLIGHTLY, FLAGSTAFF JOE CARTER, SAFFORD SUSAN E. CHILTON, ARIVACA W. HAYS GILSTRAP, PHOENIX

JOE MELTON, YUMA DIRECTOR DUANE L. SHROUFE DEPUTY DIRECTOR

STEVE K. FERRELL



March 21, 2002

Mr. William Fickel, Jr. Army Corps of Engineers Fort Worth District PO Box 17300 Fort Worth, TX 76102-0300

Special Status Species Information for INS Installation and Operation of Re: Remote Video Surveillance Equipment.

Dear Mr. Fickel:

The Arizona Game and Fish Department (Department) has reviewed your request, dated March 4, 2002, regarding special status species information associated with the abovereferenced project areas. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachments have been documented as occurring in the project areas. Included are county-wide lists as well as a list of species within a 10-mile buffer of the cities of Douglas and Naco. In addition, these projects do not occur in the vicinity of any proposed or designated Critical Habitats (ten mile buffer of the cities).

The Department's HDMS data are not intended to include potential distribution of Arizona is large and diverse with plants, animals, and special status species. environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

Mr. William Fickel, Jr. March 21, 2002

If you have any questions regarding the attached species list, please contact me at (602) 789-3618. General status information, state-wide and county distribution lists, and abstracts for some special status species are also available on our web site at: http://www.azgfd.com/frames/fishwild/hdms_site/Home.htm.

Sincerely,

Sabra S. Schwartz

Heritage Data Management System, Coordinator

SSS:ss

Attachment

cc: Bob Broscheid, Project Evaluation Program Supervisor

Joan Scott, Habitat Program Manager, Region V

AGFD #3-07-02(20)

Special Status Species within 10 Miles of Naco

Arizona Game and Fish Department, Heritage Data Management System March 21, 2002

Scientific Name	Common Name	ESA	USFS	BLM	WSCA	NPL
				-		
ALLIUM RHIZOMATUM	REDFLOWER ONION		s	s		SR
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	С	s		WC	0
ECHINOCEREUS PECTINATUS VAR PECTINATUS	TEXAS RAINBOW CACTUS					SR
GENTIANELLA WISLIZENI	WISLIZENI GENTIAN	sc	s			SR
HEDEOMA DENTATUM	MOCK-PENNYROYAL		s			01.
HEXALECTRIS WARNOCKII	TEXAS PURPLE SPIKE	sc	s	S		HS
LITHOSPERMUM VIRIDE	GREEN PUCCOON			S		110

No Critical Habitats in project area. AGFD #3-8-02(03), Remote Video Surveillance, INS.

Special Status Species within 10 Miles of Douglas

Arizona Game and Fish Department, Heritage Data Management System March 21, 2002

Scientific Name	Common Name	ESA	USFS	BLM	WSCA	NPL
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	С	s		WC	
ECHINOCEREUS PECTINATUS VAR PECTINATUS	TEXAS RAINBOW CACTUS					SR
IBERVILLEA TENUISECTA	TEXAS GLOBE BERRY			S		
PHRYNOSOMA CORNUTUM	TEXAS HORNED LIZARD	sc		S		
RANA CHIRICAHUENSIS	CHIRICAHUA LEOPARD FROG	PT	s		WC	
SISTRURUS CATENATUS EDWARDSII	DESERT MASSASAUGA		s		WC	

No Critical Habitats in project area. AGFD #3-8-02(03), Remote Video Surveillance, INS.

Special Status Species by County for Arizona Arizona Game and Fish Department, Heritage Data Management System

January 15, 2002

Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPi	NESL	Taxonomic Group
					!				
COUNTYNAME: APACHE									
		ć		٥					AMBUIDIAN
BUFO MICROSCAPHUS MICROSCAPHUS	ARIZONA LOAD	y F		o u		JW			AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICATUA LEOPARD FROG	Ţ		၇ () (}		C	
RANA PIPIENS	NORTHERN LEOPARD FROG			'n		ر *		7	AMPHIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	SC		တ		NC MC			AMPHIBIAN
ACCIPITER GENTILIS	NORTHERN GOSHAWK	SC		S		WC WC		4	BIRD
ATHENE CINICIII ARIA HYDIIGAFA	WESTERN BURROWING OWL	SC			S				BIRD
						WC			BIRD
CATHARUS FUSCENS	VEEN!) (V		7	BIRD
CERYLE ALCYON		F		U)		r =	Caia
CHARADRIUS MONTANUS	MOUNTAIN PLOVER	<u>.</u> (ე		()41		t 0	
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	ر		o		ر * :		n	מעום מ
DOLICHONYX ORYZIVORUS	BOBOLINK					S .			SIKO SIKO
DUMETELLA CAROLINENSIS	GRAY CATBIRD					MC			BIRD
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	凹	>	S		MC		2	BIRD
EAL CO PEREGRINIS ANATUM	AMERICAN PEREGRINE FALCON	SC		S		WC		4	BIRD
HALLAGETTIST FILECOCEPHALLIS		5		S		WC			BIRD
DANIDION DALIARTIN	O SPREY					WC			BIRD
TANDION TALIAR TOO	DI ACKERITED MAGDIE					WC			BIRD
FICA HUDSOINIA	מראסיים שלאים ובי מראים וב					ÜW			BIRD
PINICOLA ENUCLEATOR	FINE GROSBEAK) (} ?			
SETOPHAGA RUTICILLA	AMERICAN REDSTARI	ŀ	;	C) (}		c	מים מ
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	_ ;	>-	'n) ≽		n	BIRU
CATOSTOMUS CLARKI	DESERT SUCKER	SC			တ				FISH
CATOSTOMUS INSIGNIS	SONORA SUCKER	SC			တ				FISH
CATOSTOMUS SP 3	LITTLE COLORADO SUCKER	SC		တ	S	WC WC			FISH
GII A ROBUSTA	ROUNDTAIL CHUB	SC		S		WC		7	FISH
I EPINOMENA VITTATA	LITTLE COLORADO SPINEDACE	느	>	ഗ		WC			FISH
ONCORHYNCHIS APACHE	APACHE (ARIZONA) TROUT	<u>ا</u>		S		MC			FISH
SII II IOSO SAHAHOIMHA	SPECKLED DACE	သွ			တ				FISH
TABOON CONTROL	OACH MINNOW	h	>	တ		MC			FISH
AND CONTRACTOR TENENTS	CALIFORNIA FLOATER	SC		S					INVERTEBRATI
	ARIZONA GIANT SAND TREADER CRICKET	SC		S	S				INVERTEBRATI
DAITHINDAENET TO ANIZONEINGIO	TITLE WOLLD WATER DENNY BEET I	S.		v.					INVERTEBRAT
TOUT OUT TOUR TOUR	TUDGE EODKS SPRINGSNAII	ر د		o on	Ø,				INVERTEBRATI
PYRGULOPSIS I RIVIALIS		ه د)) U	J/W			MAMMAI
EUDERMA MACULATUM	SPOILED BAI	200		C	0) (}		•	
MICROTUS MEXICANUS NAVAHO	NAVAJO MEXICAN VOLE	ر م		n		ر *		4	
MYOTIS LUCIFUGUS OCCULTUS	OCCULT LITTLE BROWN BAT	သ			တ				MAMIMAL
PEROGNATHUS FLAVUS GOODPASTERI	SPRINGERVILLE POCKET MOUSE	SC		S					MAMMAL
SORFX PALLISTRIS	WATER SHREW					WC WC			MAMMAL
SPERMOPHILUS TRIDECEMLINEATUS	WHITE MOUNTAINS GROUND SQUIRREL			တ					MAMMAL
MONTICOLA		Ç		o		(141)			MANAMAN
ZAPUS HUDSONIUS LUTEUS	NEW MEXICAN JUMPING MOUSE	ر م		n) *			74 NINIXIV

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002						Page:2
Scientific Name	Common Name	*Critical ESA Habitat	al ıt USFS	ВГМ	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: APACHE								
ALLIUM GOODDINGII ASTRAGALUS NUTRIOSENSIS ASTRAGAI US XIPHOIDES	GOODDING ONION NUTRIOSO MILK-VETCH GLADIATOR MILK VETCH	၁ ၁ ၁ ၁ ၁ ၁ ၁	S			HS SR SR	က	PLANT PLANT PLANT
CALYPSO BULBOSA CAREX SPECUICOLA	WESTERN FAIRY SLIPPER NAVAJO SEDGE	LT				SR HS	ო	PLANT PLANT
CASTILLEJA MOGOLLONICA CHRYSOTHAMNUS MOLESTUS	WHITE MOUNTAINS PAINTBRUSH TUSAYAN RABBITBRUSH	sc sc	တ တ			SR a		PLANT PLANT
CYPRIPEDIUM PARVIFLORUM VAR PUBESCENS DRABA STANDLEYI FREMOCRINI M AI ROMARGINATI M	YELLOW LADY S-SLIPPEK STANDLEY WHITLOW-GRASS UTAH SOLITAIRE LILY	sc	S			S S		PLANT PLANT
ERIGERON RHIZOMATUS GOODYERA REPENS		רַן				SR	7	PLANT PLANT
IPOMOEA PLUMMERAE VAR CUNEIFOLIA MALAXIS PORPHYREA PLATANTHERA HYPERBOREA	HUACHUCA MORNING GLORY PURPLE ADDER'S MOUTH BOREAL BOG ORCHID		S			SR SR		PLANT PLANT PLANT
PLATANTHERA PURPURASCENS PUCCINELLA PARISHII	SLENDER BOG ORCHID PARISH ALKALI GRASS	SC				SR FS	4	PLANT PLANT
RUMEX ORTHONEURUS SALIX ARIZONICA	BLUMER'S DOCK ARIZONA WILLOW	SC	တ တ			HS HS		PLANT PLANT
SCLEROCACTUS PARVIFLORUS SENECIO QUAERENS	GLEN CANYON CACTUS GILA GROUNDSEL	sc	Ø			S S S		PLANT PLANT
STREPTOPUS AMPLEXIFOLIUS TRIFOLIUM NEUROPHYLLUM	WHITE MANUARIN I WISTED STALK WHITE MOUNTAINS CLOVER COFFEN DEATH CAMAS	SC	Ø			χ α α		PLANT
ZIGADENUS VIRESCENS THAMNOPHIS EQUES MEGALOPS THAMNOPHIS RUFIPUNCTATUS	GREEN DEATH CAWAS MEXICAN GARTER SNAKE NARROW-HEADED GARTER SNAKE	၁ ၁ Տ	တ တ		WC WC	Ś		REPTILE REPTILE
COUNTYNAME: COCHISE								
AMBYSTOMA TIGRINUM STEBBINSI ELEUTHERODACTYLUS AUGUSTI CACTORUM RANA BLAIRI RANA CHIRICAHUENSIS RANA YAVAPAIENSIS ACCIPITER GENTILIS AMAZILIA BERYLLINA AMAZILIA VIOLICEPS AMMODRAMUS BAIRDII ASTURINA NITIDA MAXIMA ATHENE CUNICULARIA HYPUGAEA BUTEOGALLUS ANTHRACINUS COCCYZUS AMERICANUS	SONORAN TIGER SALAMANDER WESTERN BARKING FROG PLAINS LEOPARD FROG CHIRICAHUA LEOPARD FROG CANYON LEOPARD FROG LOWLAND LEOPARD FROG NORTHERN GOSHAWK BERYLLINE HUMMINGBIRD VIOLET-CROWNED HUMMINGBIRD BAIRD'S SPARROW SPRAGUE'S PIPIT NORTHERN GRAY HAWK WESTERN BURROWING OWL COMMON BLACK-HAWK YELLOW-BILLED CUCKOO	LE SC SC SC SC SC C	თ თთთთთ თ თთ	တ တ			4	AMPHIBIAN AMPHIBIAN AMPHIBIAN AMPHIBIAN AMPHIBIAN BIRD BIRD BIRD BIRD BIRD BIRD BIRD BIRD

Special Status Species by County for Arizona AGFE	AGFD, HDMS	January 15, 2002	2002						Page:3
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCHISE									
						(///			COIO
DENDROCYGNA AUTUMNALIS	BLACK-BELLIED WHISTLING-DUCK	Ċ				ა ა ×			BIRD
EMPIDONAX FOLVIFRONS PYGMARUS	SOLITHWESTERN WILLOW FLYCATCHER	Э Щ	>	ဟ		WC		2	BIRD
EINFIDONAX TRAILEIL EXTINOS	EARED TROGON			S					BIRD
EOF TEOTIS NEONETHOS	AMERICAN PEREGRINE FALCON	SC		S		WC		4	BIRD
TALCO TENEGRINOS AINTONIONIONIONIONIONIONIONIONIONIONIONIONIO	MISSISSIPPI KITE					WC			BIRD
OTENY MISSISSIFF FEMSIS	MEXICAN SPOTTED OWL	רו	>	S		WC		က	BIRD
TROCON FI FGANS	ELEGANT TROGON					WC			BIRD
TYPANNI IS CRASSIBOSTRIS	THICK-BILLED KINGBIRD					MC			BIRD
TYPANNING MEI ANCHOLISIS	TROPICAL KINGBIRD					NC WC			BIRD
AGOSIA CHRYSOGASTER	LONGFIN DACE	SC			S				FISH
CAMPOSTOMA ORNATIM	MEXICAN STONEROLLER	SC		S					FISH
CATOSTOMIS CLARKI	DESERT SUCKER	SC			S				FISH
CATOSTOMIS INSIGNIS	SONORA SUCKER	SC			S				FISH
CYPRINE! A FORMOSA	BEAUTIFUL SHINER	占	>			WC			FISH
GII A INTERMEDIA	GILA CHUB	O		S		MC			FISH
GILA PURPUREA	YAQUI CHUB	쁘	>-			MC			FISH
ICTAL IRIS PRICE	YAQUI CATFISH	LT	> -			MC			FISH
POECII IOPSIS OCCIDENTALIS SONORIENSIS	YAQUI TOPMINNOW	旦				MC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	SC			S				FISH
TIAROGA CORITIS	LOACH MINNOW	П	>	S		NC MC			FISH
AGATHYMUS ARYXNA	ARIZONA GIANT SKIPPER			S					INVERTEBRATE
AGATHYMI'S EVANSI	HUACHUCA GIANT-SKIPPER			တ					INVERTEBRATI
CICINDEI A OREGONA MARICOPA	MARICOPA TIGER BEETLE	SC		တ	S				INVERTEBRAT
FRYNNIS SCUDDER!	SCUDDER'S DUSKY WING			S					INVERTEBRAT
NEOPHASIA TERLOOTII	CHIRICAHUA PINE WHITE			တ ၊					INVERTEBRAL
PSEPHENUS ARIZONENSIS	ARIZONA WATER PENNY BEETLE	သင		က ((INVERTEBRAL
PYRGULOPSIS BERNARDINA	SAN BERNARDINO SPRINGSNAIL	၁ မ		n o	n (147011701/11 140011701/11
PYRGULOPSIS THOMPSONI	HUACHUCA SPRINGSNAIL	ပ ဗိ		n c	S)				INVERTEBRAT
STYGOBROMUS ARIZONENSIS	ARIZONA CAVE AMPHIPOD	ည် (၁		n	(
CHOERONYCTERIS MEXICANA	MEXICAN LONG-TONGUED BAT	သွ			'n) *			
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	သွ			Ċ				MANNAL
IDIONYCTERIS PHYLLOTIS	ALLEN'S BIG-EARED BAT	S S			'n	9			
LASIURUS BLOSSEVILLII	WESTERN RED BAT) } §			MANIMAL
LASIURUS XANTHINUS	WESTERN YELLOW BAT	!		(ر * ج			IVIAIVIIVIAL
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	ш ('n	Ċ	S M			MANIMAL
MYOTIS CILIOLABRUM	WESTERN SMALL-FOOTED MYOTIS	၁ တိ			တ				MANIMAL
MYOTIS THYSANODES	FRINGED MYOTIS	္က ပ			n c				MAMMAI
MYOTIS VELIFER	CAVE MYOTIS) (n u				MAMMAI
MYOTIS VOLANS	LONG-LEGGED MYOTIS	3			o v				MAMMAL
NYCTINOMOPS FEMOROSACCUS	POONE LED FACE-1 AILLO DAT	SC			တ				MAMMAL
DANTHERA ONCA	JAGUAR	띰	z	S		WC			MAMMAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC						4	MAMMAL

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002						Page:4
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCHISE								
	1 1	(Ó					10808084
SCIURUS NAYARITENSIS CHIRICAHUAE	CHIRICAHUA FOX SQUIRREL	သွ ဖ	'n					MAMMAL
SIGMODON OCHROGNATHUS	YELLOW-NOSED COTTON RAI	သွ ဒ	ú		Ç/A			MANAMAL
SOREX ARIZONAE	ARIZONA SHREW	ر م	n) }	ď		PI ANT
ALLIUM PLUMMERAE	PLOMMER ONION		o			5 0		DI ANT
ALLIUM RHIZOMATUM	KEDFLOWER ONION		ס	U		á		PI ANT
AMMOCODON CHENOPODIOIDES	GOOSEFOOT MOONPOD			o		٥٥		
APACHERIA CHIRICAHUENSIS	CHIRICAHUA KOCK FLOWEK		U			5		P. ANT
ARABIS TRICORNUTA	CHIRICAHUA KOCK CKESS		o (
ASCLEPIAS LEMMONII	LEMMON MILKWEED		n	c				
ASPLENIUM DALHOUSIAE	DALHOUSE SPLEENWORT	•	('n		í		LAN.
ASTRAGALUS COBRENSIS VAR MAGUIREI	COPPERMINE MILK-VETCH	သွ	y c	c		אָר מ		PLAN I
ASTRAGALUS HYPOXYLUS	HUACHUCA MILK-VETCH	၁၈	n (n		6		
CAREX CHIHUAHUENSIS	A SEDGE		n ((
CAREX ULTRA	ARIZONA GIANT SEDGE		တ (တ				PLANI
CASTILLEJA NERVATA	TRANS-PECOS INDIAN-PAINTBRUSH		ഗ					T NA
CI FOME MUI TICAULIS	PLAYA SPIDER PLANT	sc				SR		PLANT
CORYPHANTHA ROBBINSORUM	COCHISE PINCUSHION CACTUS	ב				£		PLANT
CORYPHANTHA SCHEERI VAR VALIDA	SLENDER NEEDLE CORYCACTUS					SR		PLANT
CORYPHANTHA STROBILIFORMIS	COB CORYCACTUS					SR		PLANT
COURSETIA GLABELLA		SC	S					PLANT
DRABA STANDLEYI	STANDLEY WHITLOW-GRASS	SC						PLANT
ECHINOCEREUS LEDINGII	PINALENO HEDGEHOG CACTUS					SR		PLANT
ECHINOCEREUS PECTINATUS VAR PECTINATUS	TEXAS RAINBOW (SR		PLANT
ECHINOMASTUS ERECTOCENTRUS VAR	NEEDLE-SPINED PINEAPPLE CACTUS	SC	S			SR		PLANT
ERECTOCENIRUS	SILLOVOINCELLIA					SR		PLANT
TOTO TOTO A POSO TO TOTO TOTO TOTO TOTO TOTO TOTO T			S					PLANT
TRIGEROIN ARISOLIOS	CHIRICAHIJA FI FABANF	သွ	S			SR		PLANT
THIS TO THE STATE OF THE STATE		i C				HS		PLANT
EX/GEXON LEMIMONIN	SAN CARLOS WII D-BI ICKWHEAT	S. S.				SR		PLANT
EKIOGONOM CAPILLAKE	WOODI AND SPIRGE	ာတ				SR		PLANT
TOTOTO SEE SECTION OF THE SECTION OF	WIST 17ENI GENTIAN	S	S			SR		PLANT
GEN HANELLA WISLIZEIVI	RARTRAM STONECROP	SC	S	S		SR		PLANT
GRAFIOTH ALON BARIRANI	CHIBICAHIA MOCK PENNYROYAI	1	S	ı				PLANT
HEDEOMA COSTATUM	MOCK DENNYBOXAI		o vo					PLANT
HEDEOMA DENIALOM	MOCK-T ENGLISH ANTER	CS	o Cr	v:				PLANT
HETEROTHECA KULLEKI	ADIZONIA ALLIM BOOT))	o v)				PLANT
HEUCHERA GLOMERULA IA	COESTED CORAL BOOT)			SR		PLANT
HEXALECTRIS OFICATA	TEXAS DIBDI F SDIKE	SC	ς,	v:		S Y		PLANT
HEXALECTRIS WARNOCK!!	DEING F HAWKWEFT	SC	S)				PLANT
TIERACIOM PRINGLE!	BUSBY HAWKWEED	!	တ					PLANT
HIERACIOM KOSBYI	TEXAS GLORE BERRY			S				PLANT
IBERVILLER TENOISEOTA	HIACHICA MORNING GLORY		S					PLANT
IPOMORA PLUMMERAR VAR SOMEIFOLM	THIRRER'S MORNING-GLORY		S					PLANT
FOMORA I FORBER)					

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002	2002						Page:5
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCHISE									
I AENINECIA ERIOPHYI I A	WOOLLY FLEABANE			S					PLANT
LILAEOPSIS SCHAFFNERIANA VAR RECURVA	HUACHUCA WATER UMBEL	끸	>				HS		PLANT
I II IIIM PARRYI	LEMMON LILY	SC		S			SR		PLANT
I OBFI IA FENESTRALIS	LEAFY LOBELIA						SR		PLANT
LUPINUS HUACHUCANUS	HUACHUCA MOUNTAIN LUPINE			S					PLANT
LUPINUS LEMMONII	LEMMON'S LUPINE			S					PLANT
MALAXIS CORYMBOSA	MADREAN ADDERS MOUTH						SR		PLANT
MALAXIS PORPHYREA	PURPLE ADDER'S MOUTH						SR		PLANT
MALAXIS TENUIS	SLENDER ADDERS MOUTH						SR		PLANT
MAMMILLARIA VIRIDIFLORA	VARIED FISHHOOK CACTUS						SR		PLANT
MAMMILLARIA WRIGHTII VAR WILCOXII	WILCOX FISHHOOK CACTUS	1		(SR		PLANT
METASTELMA MEXICANUM	WIGGINS MILKWEED VINE	သူ		ۍ د <u>د</u>					PLANI
MUHLENBERGIA DUBIOIDES	BOX CANYON MUHLY			တ ဖ					PLANI
PASPALUM VIRLETII	VIRLET PASPALUM	(တ					PLANI
PECTIS IMBERBIS	BEARDLESS CHINCH WEED	SC		တ			,		PLANI
PENIOCEREUS GREGGII VAR GREGGII	NIGHT-BLOOMING CEREUS	SC		1			SR		PLANT
PENSTEMON DISCOLOR	CATALINA BEARDTONGUE			တ (S		PLANI
PENSTEMON RAMOSUS	BRANCHING PENSTEMON			တ (PLANI
PENSTEMON SUPERBUS	SUPERB BEARDTONGUE			SO (í		PLAN!
PERITYLE COCHISENSIS	CHIRICAHUA ROCK DAISY			တ (XX X		PLANI
PHYSALIS LATIPHYSA	BROAD-LEAF GROUND-CHERRY			တ			(PLAN!
PLATANTHERA LIMOSA	THURBER'S BOG ORCHID			(X Y		P. ANI
POLEMONIUM PAUCIFLORUM SSP HINCKLEYI	HINCKLEY'S LADDER	S S		o o					PLAN I
PSILACTIS GENTRYI	MEXICAN BARE-RAY-ASTER	(n o			-		LAN C
RUMEX ORTHONEURUS	BLUMER'S DOCK	သွင		တ (•		ES.		PLANI
SALVIA AMISSA	ARAVAIPA SAGE	သင		တ (S				PLAN:
SAMOLUS VAGANS	CHIRICAHUA MOUNTAIN BROOKWEED			S			ĺ		PLANI
SCHIEDEELLA PARASITICA	FALLEN LADIES'-TRESSES			•			XX		PLANI
SENECIO CARLOMASONII	SEEMANN GROUNDSEL			က			!		PLAN
SENECIO HUACHUCANUS	HUACHUCA GROUNDSEL			တ			E S		F AN
SENECIO NEOMEXICANUS VAR TOUMEYI	TOUMEY GROUNDSEL			တ					PLAN!
SISYRINCHIUM CERNUUM	NODDING BLUE-EYED GRASS			တ					PLANT
SPIRANTHES DELITESCENS	MADREAN LADIES'-TRESSES	Щ					ΣΞ		PLANI
STELLARIA PORSILDII	PORSILD'S STARWORT			S					PLANT
STENORRHYNCHOS MICHUACANUS	MICHOACAN LADIES'-TRESSES						SR		PLANT
TALINUM MARGINATUM	TEPIC FLAME FLOWER	SC		S			SR		PLANT
TEPHROSIA THURBERI	THURBER HOARY PEA			S					PLANT
TRAGIALACINIATA	SONORAN NOSEBURN			S					PLANT
VALIGITEINIA CALIFORNICA SSP PAUCIFLORA	LIMESTONE ARIZONA ROSEWOOD	SC					SR		PLANT
VIOLA UMBRATICOLA	SHADE VIOLET			တ					PLANT
ZIGADENUS VIRESCENS	GREEN DEATH CAMAS						SR		PLANT
CNEMIDOPHORUS BURTI STICTOGRAMMUS	GIANT SPOTTED WHIPTAIL	SC		S	S				REPTILE
CROTALUS WILLARDI OBSCURUS	NEW MEXICO RIDGENOSE RATTLESNAKE	5	>-	(:			REPTILE
CROTALUS WILLARDI WILLARDI	ARIZONA RIDGENOSE KATTLESNAKE			'n		S S			ДП Т П

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002	2002						Page:6
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCHISE									
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE TEXAS HORNED LIZARD	လ လ			U	WC			REPTILE
SISTRURUS CATENATUS EDWARDSII	DESERT MASSASAUGA	3		S	o	WC			REPTILE REPTILE
THAMNOPHIS EQUES MEGALOPS	MEXICAN GARTER SNAKE	SC		S		WC			REPTILE
COUNTYNAME: COCONINO									
BUFO MICROSCAPHUS MICROSCAPHUS	ARIZONA TOAD	SC		S					AMPHIBIAN
RANA BLAIRI	PLAINS LEOPARD FROG	!		,		WC			AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICAHUA LEOPARD FROG	Ь		တ		MC:		,	AMPHIBIAN
KANA PIPIENS RANA YAVAPAIFNSIS	NOK I HEKN LEOPAKU PKOG I OWI AND I FOPARD FROG	S		n v		ე () 		7	AMPHIBIAN
ACCIPITER GENTILIS	NORTHERN GOSHAWK	SC		တ		X X		4	BIRD
ATHENE CUNICULARIA HYPUGAEA	WESTERN BURROWING OWL	SC			S				BIRD
BUTEO REGALIS	FERRUGINOUS HAWK	SC		•		MC		ဗ	BIRD
BUTEOGALLUS ANTHRACINUS CERVI E ALOVON	COMMON BLACK-HAWK RELTED KINGEISHER			S		O V		*	BIRD
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	끰	>	S) 		5 4	BIRD
EUPTILOTIS NEOXENUS	EARED TROGON			S					BIRD
FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON	SC		S		WC		4	BIRD
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	5		တ		S &			BIRD
PINICOLA ENUCLEATOR	PINE GROSBEAK					ე (ე Š			BIRD
PLEGADIS CHIHI	WHITE-FACED IBIS	SC			S)			BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	Ļ	>	S		WC		က	BIRD
CATOSTOMUS CLARKI	DESERT SUCKER	SC			S				FISH
CATOSTOMUS INSIGNIS	SONORA SUCKER	SC		(S				FISH
CATOSTOMUS LATIPINNIS	FLANNELMOUTH SUCKER	သ လ		တ ပ	ú	OW.			HSH
GILA CYPHA	HUMPBACK CHUB) 비	>-	•)) X		^	FISH
GILA ROBUSTA	ROUNDTAIL CHUB	SC		S		WC		2	FISH
LEPIDOMEDA VITTATA	LITTLE COLORADO SPINEDACE	LJ	>	S		WC			FISH
ONCORHYNCHUS APACHE	APACHE (ARIZONA) TROUT	니		S		WC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	SC			S				FISH
XYRAUCHEN TEXANUS	RAZORBACK SUCKER	Э 8	>-	တ (WC		2	FISH
ANODON I A CALIFORNIENSIS ARCHEO! ARCA CAVICO! A	CALIFORNIA FLOALER GRAND CANYON CAVE PSELIDOSCORPION	၃ လ		n					INVERTEBRATE
CICINDELA OREGONA MARICOPA	MARICOPA TIGER BEETLE	SS		S	S				INVERTEBRATE
DISCUS SHIMEKII COCKERELLI	COCKERELL'S STRIATE DISC (SNAIL)	SC			S				INVERTEBRATE
METRICHIA VOLADA	PAGE SPRING MICRO CADDISFLY	SC		Ć	(INVERTEBRATE
OXYLOMA HAYDENI HAYDENI OXXLOMA HAXDENI KANABENISIS	NIOBRARA AMBERSNAIL KANAR AMBERSNAII	ш -		y o	ഗധ			•	INVERTEBRATE
STENOPEI MATUS NAVAJO	NAVAJO JERUSALEM CRICKET	SC		o v	o v			4	INVERTERRATE
))))				

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002						Page:7
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCONINO								
DIPODOMYS MICROPS LEUCOTIS	HOUSEROCK VALLEY CHISEL-TOOTHED	SC		S	WC		4	MAMMAL
ELIDERNA MACCILI ATLIM	KANGAROO RAT SPOTTED BAT	SC		S	WC			MAMMAL
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	sc						MAMMAL
IDIONYCTERIS PHYLLOTIS	ALLEN'S BIG-EARED BAT	SC		S				MAMMAL
LASIURUS BLOSSEVILLII	WESTERN RED BAT				MC S			MAMMAL
MICROTUS MEXICANUS HUALPAIENSIS	HUALAPAI MEXICAN VOLE	э %	c		S W		•	MAMMAL
MICROTUS MEXICANUS NAVAHO	NAVAJO MEXICAN VOLE	သွ ဒ	n	o	ر *		4	MAMMAL
MYOTIS CILIOLABRUM	WESTERN SMALL-FOOTED MYOTIS	ງ ປ		o v				MAMMAI
MYO11S EVO11S		ຊ ເ		ου				MAMMA!
MYOTIS LUCIFUGUS UCCULTUS	CCCULI LITTE BROWIN BAT	S 0.		o v				MAMMAL
MYOTIO TOTANODEO	CONG-1 EGGED MYOTIS	သွ		ာတ				MAMMAL
NYCTINOMOPS MACROTIS	BIG FREE-TAILED BAT	SC		S				MAMMAL
PEROGNATHUS AMPLUS CINERIS	WUPATKI ARIZONA POCKET MOUSE	SC	S					MAMMAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC					4	MAMMAL
ALLIUM BIGELOVII	BIGELOW ONION			Ó		SR	•	PLANT
AMSONIA PEEBLESII	PEEBLES BLUE STAR			S		0	4	PLANI
AQUILEGIA DESERTORUM	MOGOLLON COLUMBINE	Ç				አ		PLAN!
ARGEMONE ARIZONICA	ROARING SPRINGS PRICKLY-POPPY	> - د				V I	4	PI ANT
ASCLEPIAS WELSHII	WELSH'S MILKWEED		ď			2	t	PLANT
ASTRAGALUS AMPULLARIUS ASTRAGALUS CREMNOPHYLAX VAR	SENTRY MILK-VETCH	3 끸	o			HS		PLANT
CREMNOPHYLAX			,				,	!
ASTRAGALUS CREMNOPHYLAX VAR HEVRONII	MARBLE CANYON MILK-VETCH	(တ (Ó		Ċ	က	PLANT Fig. 10
ASTRAGALUS CREMNOPHYLAX VAR MYRIORRHAPHIS	CLIFF MILK-VETCH	လွ	တ	ဟ		X.		L AN
ASTRAGALUS RUSBYI	RUSBY'S MILK-VETCH		S			ļ		PLANT
ASTRAGALUS XIPHOIDES	GLADIATOR MILK VETCH	SC				SR G		PLANT
CALYPSO BULBOSA	WESTERN FAIRY SLIPPER	ė ((کر ج		PLAN:
CAMISSONIA EXILIS	SLENDER EVENING-PRIMROSE	သင ပို့		S		Z Z		LAN I
CAMISSONIA SPECUICOLA SSP HESPERIA	GRAND CANYON EVENING-PRIMROSE) S				0	c	FILAN
CAREX SPECUICOLA	NAVAJO SEDGE	-	د			2	·	
CASTILLEJA KAIBABENSIS	KAIBAB PAIN I BRUSH	Ç	n c					ENA 19
CHRYSOTHAMNUS MOLESTUS	TUSAYAN KABBITBKUSH	ာ ပ	n v			y I		PI ANT
CIMICIFUGA ARIZONICA	AKIZONA BOGBANE) ()	o v.			2 00		PLANT
CIRSIUM PARRYI SSP MOGOLLONICUM	MUGOLLON THIS LE)	ס			2 C		P! ANT
CORYPHANTHA MISSOURIENSIS	MISSOURI CONTCACTOS	S	v:			Ś		PLANT
CYMOP IEROS MEGACEPTALOS	ROCK E FABANE	}	တ					PLANT
ENIGENOIN SAXATIEIS	HEATH FAE WII D-BLICKWHFAT		S					PLANT
FRIOGONIM RIPI FYI	RIPLEY WILD-BUCKWHEAT	SC	S			SR		PLANT
FRRAZIRIZIA ROTUNDATA	ROUNDLEAF ERRAZURIZIA			S		SR	4	PLANT
FLAVERIA MCDOUGALLII	GRAND CANYON FLAVERIA					SR		PLANT
GENTIANOPSIS BARBELLATA	BEARDED GENTIAN		S					PLANT

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002						Page:8
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: COCONINO								
HEDEOMA DIFFUSUM	FLAGSTAFF PENNYROYAL		တ တ			SR		PLANT PLANT
HEUCHERA EASTWOODIAE	EASTWOOD ALOW ROOT	SC	S					PLANT
LESQUERELLA KAIBABEINSIS	PURPLE ADDER'S MOUTH					SR		PLANT
OPINITA RASII ARIS VAR AUREA	YELLOW BEAVERTAIL					SR		PLANT
OPUNTIA NICHOLII	NAVAJO BRIDGE CACTUS	!				SR SE	c	PLANI
PEDIOCACTUS BRADYI	BRADY PINCUSHION CACTUS	ш 5	U	U		o K E E	7	PLANT
PEDIOCACTUS PARADINEI	KAIBAB PINCUSHION CACTUS FICKEISEN PLAINS CACTUS	ာ ပ	ာဟ	ာဟ		E S	င	PLANT
FEDIOCACIOS TELEBELOSTOS VIX.		<u> </u>				Y.		PI ANT
PEDIOCACTUS SILERI	SILER PINCUSHION CACTUS					SR		PLANT
PEDIOCACTUS SIMPSONII	SINSET CRATER BEARDTONGUE	sc	S			SR		PLANT
PENSTEMON OLD FEI PENSTEMON NUDIFLORUS	FLAGSTAFF BEARDTONGUE		S					PLANT
PHACELIA SERRATA	CINDER PHACELIA	၁၀					4	PLANT
PHACELIA WELSHII	WELSH PHACELIA POCKY MOLINTAIN BRISTI FCONE PINE) n				SR		PLANT
PINUS AKISTATA	ALCOVE BOG-ORCHID	SC				!	က	PLANT
PENINTIEMA ZOTTECTION PRIMITA SPECUICOLA	GRAND CANYON PRIMROSE	1				SR		PLANI
PSOROTHAMNUS THOMPSONAE VAR WHITINGII	WHITING INDIGO BUSH	သွင				ŭ I	4	PI ANT
PUCCINELLIA PARISHII	PARISH ALKALI GRASS) ()	U	U		2 Y.	r	PLANT
ROSA STELLATA SSP ABYSSA	GRAND CANYON ROSE	ာ တ	ာဟ	ס		HS E		PLANT
RUMEX ORTHONEURUS	BLUMER'S DOCK	3)			SR		PLANT
SCLEROCACTUS PARVIFLURUS	GLEN CANTON CACTOS					SR		PLANT
SCLEROCACTOS SILERI	SAN FRANCISCO PEAKS GROUNDSEL	LT Y				HS		PLANT
SEIVECTO PRAINCISCANOS	GRAND CANYON CATCHFLY	SC						PLANT
SILENE RECTINAMENT	TUSAYAN FLAME FLOWER	SC				SR		PLANI
THE VPTERIS PUBERULA VAR SONORENSIS	ARAVAIPA WOOD FERN			S		C		PLAN
ZIGADENUS VIRESCENS	GREEN DEATH CAMAS		c			ሂ አ		PCAN I
CROTALUS VIRIDIS ABYSSUS	GRAND CANYON RATTLESNAKE	Ç	n u		C/W			REPTILE
THAMNOPHIS EQUES MEGALOPS THAMNOPHIS RUFIPUNCTATUS	MEXICAN GARTER SNAKE NARROW-HEADED GARTER SNAKE	သ လ	ာ ဟ		WC WC			REPTILE
COUNTYNAME: GILA								
RIJEO MICROSCAPHUS MICROSCAPHUS	ARIZONA TOAD	SC	S		9			AMPHIBIAN
ELEUTHERODACTYLUS AUGUSTI CACTORUM	WESTERN BARKING FROG	<u>-</u> 0	so so		ე ე X X			AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICAHUA LEOPARU FRUG	SC	တ		AC X			AMPHIBIAN
RANA YAVAFAIENSIS ACCIDITER GENTII IS	NORTHERN GOSHAWK	SC	S		WC		4	BIRD
ASTURINA NITIDA MAXIMA	NORTHERN GRAY HAWK	SC	y (S	S WC			BIRD PIPD
BUTEOGALLUS ANTHRACINUS	COMMON BLACK-HAWK		n) × ×		4	BIRD
CERYLE ALCYON	מבר בי							

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002	2002						Page:9
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: GILA									
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	ပ		S		NC V		ო	BIRD BIRD
DOI ICHONYX ORYZIVORUS	BOBOLINK	!	;	c		ک ج		c	DAIR Cala
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	Щ	> -	n u		>		1	BIRD
EUPTILOTIS NEOXENUS	EARED TROGON	Ü		o v		WC		4	BIRD
FALCO PEREGRINUS ANATUM	TYTO KIND	3 5		တ		WC			BIRD
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	Ì				WC			BIRD
PANDION HALIAETUS	MEXICAN SPOTTED OWL	בו	>	S		WC		က	BIRD
STRIX OCCIDENTALIS LOCIDA	LONGFIN DACE	SC			တ				HSH
CATOSTOMUS CLARKI	DESERT SUCKER	SC			တ ပ				HSIT HSIT
CATOSTOMUS INSIGNIS	SONORA SUCKER	သ ဇ		U	n	C/W			HSH HSH
GILA INTERMEDIA	GILA CHUB	ه د		n v) 		2	FISH
GILA ROBUSTA	ROUNDTAIL CHUB	у Б		•		X S			FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	GILA TOPMINNOW	SC			S				FISH
RHINICHTHYS OSCULUS	SPECALED DAGE BAZORRACK SLICKER	쁜	>-	S		WC		2	FISH
XYRAUCHEN I EXANUS				S					INVERTEBRAT
AGA I TOM ARIZOMICOS	CALIFORNIA FLOATER	SC		တ	,				INVEKTEBRAT
CICINDEI A ORFGONA MARICOPA	MARICOPA TIGER BEETLE	SC		တ (တ (INVERTEBRAT
CICINDEEA CICECOIA MATAGOSTA	FOSSIL SPRINGSNAIL	SC		တ	တ				MAMMAI
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	သွင			U				MAMMAL
IDIONYCTERIS PHYLLOTIS	ALLEN'S BIG-EARED BAT	<u>ه</u>			ס	WC			MAMMAL
LASIURUS BLOSSEVILLII	WESTERN RED BAT	S			S	MC WC			MAMMAL
MACROTUS CALIFORNICUS	OCCIII TIITIE BROWN BAT	SC			S				MAMMAL
MYOTIS LUCIFUGOS OCCULTUS	FRINGED MYOTIS	SC			S				MAMMAL
MYOTIS THYSANODES	CAVE MYOTIS	SC			S				MAMMAL
MYCTINOMOPS FEMOROSACCUS	POCKETED FREE-TAILED BAT	٠			တ			•	MANNAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	၁၀		ú			ď	t	PLANT
ABUTILON PARISHII	PIMA INDIAN MALLOW	בי) <i>(</i> ;			YS SE		PLANT
AGAVE ARIZONICA	ARIZONA AGAVE	J 8		တ			£		PLANT
AGAVE DELAMATERI	TONIO BASIN AGAVE	S		တ	S		R		PLANT
AGAVE MURPHEYI	HOHOKAM AGAVE)					SR		PLANT
AGAVE TOUMEYANA VAR BELLA				S					PLANT
CAREX CHIHUAHUENSIS	A SELUCE ABIZONA BIIGBANE	SC		S			HS		PLANT
CIMICIFUGA AKIZOIVICA FCHINOCFRFIIS TRIGLOCHIDIATUS VAR	ARIZONA HEDGEHOG CACTUS	믜		S			¥		PLANI
ARIZONICUS		Ü		v.					PLANT
ERIGERON ANCHANA	MOGOLLON FLEABANE SAN CARLOS WILD-BLICKWHEAT) (2))			SR		PLANT
ERIOGONUM CAPILLARE	FI ANNEL BUSH				S		SR		PLANT
FREMONIODENDRON CALILONNOSIII HEICHERA FASTWOODIAE	EASTWOOD ALUM ROOT			တ (PLAN!
HEUCHERA GLOMERULATA	ARIZONA ALUM ROOT			o			SR		PLANT
MAMMILLARIA VIRIDIFLORA	VARIED FISHINGON CACIOS								

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002	2						Page: 10
Scientific Name	Common Name	*Cri ESA Hat	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: GILA									
OSMORHIZA BRACHYPODA	SWEET CICELY			S					PLANT
PENSTEMON NUDIFLORUS	FLAGSTAFF BEARDTONGUE			တ					PLAN .
PENSTEMON SUPERBUS	SUPERB BEARDTONGUE			n c					LAN!
PERITYLE GILENSIS VAR SALENSIS	GILA ROCK DAISY	(n o					ו אוליום
PERITYLE SAXICOLA	FISH CREEK ROCK DAISY	သွ		က (FLAN-
PHLOX AMABILIS	ARIZONA PHLOX	,		တ (-		PLANI
RUMEX ORTHONEURUS	BLUMER'S DOCK	SC		တ (Ć		Ž.		PLANI
SALVIA AMISSA	ARAVAIPA SAGE	သွ		n	S	9			
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	SC		Ó) (S			
THAMNOPHIS EQUES MEGALOPS	MEXICAN GARTER SNAKE	သင္လ		o o		ر د د			
THAMNOPHIS RUFIPUNCTATUS XANTUSIA VIGILIS ARIZONAE	NARROW-HEADED GARTER SNAKE ARIZONA NIGHT LIZARD))		n vo		>			REPTILE
COUNTYNAME: GRAHAM									
	A BIZONIA TOAD	SC		S					AMPHIBIAN
BUFO MICROSCAPHUS MICROSCAPHUS	ANIZONA I OAU	PT		S		WC			AMPHIBIAN
RANA CHIRICAHUENSIS	CHECKLON CECONOL ECONOMICS CONTRACTOR CONTRA	SC		S		WC			AMPHIBIAN
KANA YAVAFAIENSIS	NODTHERN GOSHAWK	SC		S		WC		4	BIRD
ACCIPILER GENTILIS	WESTERN BURROWING OWL	SC			S				BIRD
A I HENE CUNICULARIA II Y PUGAEA	COMMON BLACK-HAWK	1		S		MC			BIRD
BUTEOGALLOS ANTARACINOS	YELLOW-BILLED CUCKOO	O		S		WC		က	BIRD
COCCITOS AMERICANOS	SOUTHWESTERN WILLOW FLYCATCHER	믜	>-	S		WC		2	BIRD
EMPLOCIVES TRAILER EXTRAOS	AMERICAN PEREGRINE FALCON	SC		S		MC		4	BIRD
HAI JAFFTIS I FIJCOCEPHALUS	BALD EAGLE	占		S		NC NC		,	BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	ᅼ	>-	တ		MC MC		n	BIRU
AGOSIA CHRYSOGASTER	LONGFIN DACE	၁၄			က ပ				E TOL
CATOSTOMUS CLARKI	DESERT SUCKER	ນ ເ			o 0				ESH HSH
CATOSTOMUS INSIGNIS	SONORA SUCKER	ر ا	>		0	OW.			FISH
CYPRINODON MACULARIUS	DESEKT POPRISH	۲ د	-	U.		X S			FISH
GILA INTERMEDIA		o w		တ		X X		2	FISH
GILA ROBUSTA	SDINE OF OUR	<u> </u>	>	တ		WC			FISH
MEDA FULGIDA	STINEDACE ABIZONA) TBOLIT	i <u>-</u>		S		WC			FISH
ONCORHYNCHUS APACHE	AFACHE (ANIZOINA) INCOL	; "		,		MC			FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS		SC			S				FISH
RHINICHTHYS OSCULUS	STECKLED DAGE	3 =	>	S	ı	WC			FISH
TIAROGA COBILIS	LOACH MINION	: <u>Ш</u>	· >-	S		WC		2	FISH
XYRAUCHEN TEXANUS	CALIFORNIA EL DATER	i S		S					INVERTEBRATE
ANODON I A CALIFORNIENSIS	MABICODA TIGER BEETIF	SC		ဟ	S				INVERTEBRATE
CICINDELA OREGOINA MARICOPA	DINAL FNO MONKEY GRASSHOPPER	၁၀		S					INVERTEBRATE
EOMORSEA PINALENO	OBSOLETE VICEROY BUTTERFLY			S					INVERTEBRATE
ORFOHFI IX GRAHAMENSIS	PINALENO MOUNTAINSNAIL			S					INVERTEBRATE
PYRGULOPSIS ARIZONAE	BYLAS SPRINGSNAIL	သွ		တ	တ				INVERIEBRALE
									-

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January 15, 2002	*Critical
Special Status Species by County for Arizona AGFD, HDMS	

	Common Name	ESA H	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL.	Taxonomic Group
COUNTYNAME: GRAHAM									
SONOBEL 4 CHRISTENSENI	CLARK PEAK TALUSSNAIL	SC		S					INVERTEBRATE
SONORELLA GRAHAMENSIS	PINALENO TALUSSNAIL	သွ		တပ					INVERTEBRATE
SONORELLA IMITATOR	MIMIC TALUSSNAIL	رن		n v					INVERTEBRATE
SONORELLA MACROPHALLUS	WET CANYON TALUSSNAIL) ((o v					INVERTEBRATE
TRYONIA GILAE	GILA IRYONIA	y C)	v.	MC			MAMMAL
CHOERONYCTERIS MEXICANA	MEXICAN LONG-10NGUED BAT	ွ တ)) :			MAMMAL
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	ຸ ທ			v.				MAMMAL
IDIONYCTERIS PHYLLOTIS	ALLEN'S BIG-EAKED BAI	3)	MC			MAMMAL
LASIURUS BLOSSEVILLII	WESTERN RED BAI	щ		S		MC W			MAMMAL
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	, C)	S	WC			MAMMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT)		S	,				MAMMAL
MICROTUS LONGICAUDUS LEUCOPHAEUS	WHILE-BELLIED LONG-INILED VOEL	SC			S				MAMMAL
MYOTIS VELIFER	CAVE MITORIS	SC							MAMMAL
MYOTIS YUMANENSIS	VELLOW, NOSED COTTON RAT	SC							MAMMAL
SIGMODON OCHROGNATHUS	MT GRAHAM RED SOUIRREL	LE	>			MC			MAMMAL
HAMIASCIURUS MUDSOINICUS GRAFIAINICIS	MEARNS' SOUTHERN POCKET GOPHER	SC							MAMMAL
HOMOMYS BOLLAE MEANNS	PIMA INDIAN MALLOW	SC		S			SR		PLANT
ABO IILON TANISI III	A SEDGE			တ					PLAN!
	ARIZONA GIANT SEDGE			S	S		i		PLANI
CAREA ULIVA	PINALENO HEDGEHOG CACTUS						SR		PLANI
CONTROCENED LEDINON	PINALENOS FLEABANE	SC					1		PLANI
CDIOCEDON PISCATIONS	FISH CREEK FLEABANE	SC		တ	S		S G		PLAN!
ENIGENOIN TOOM TOOM	APACHE WILD-BUCKWHEAT	SC					SS (PLAN!
ENIOGONI M. CAPILLARE	SAN CARLOS WILD-BUCKWHEAT	SC		1			S. Y.		PLANI
EI IPATORI IM BIGELOVII	BIGELOW THOROUGHWORT			တ (PLAN!
HACKELIA URSINA	CHIHUAHUAN STICKSEED			တ ဖ					PLAN!
HELICHERA GLOMERULATA	ARIZONA ALUM ROOT			က ပ					PI ANT
HIFRACIUM RUSBYI	RUSBY HAWKWEED			n			0		PI ANT
MAMMII LARIA VIRIDIFLORA	VARIED FISHHOOK CACTUS						ב ה		PI ANT
MANNAIL I ARIA WRIGHTII VAR WILCOXII	WILCOX FISHHOOK CACTUS			(۲ 0		TNA 10
PENSTEMON DISCOLOR	CATALINA BEARDTONGUE			y (Ę		DI ANT
DENSTEMON RAMOSUS	BRANCHING PENSTEMON			က (P ANT
PENSTEMON SUPERBUS	SUPERB BEARDTONGUE			n c					PI ANT
PHYSAI IS I ATIPHYSA	BROAD-LEAF GROUND-CHERRY			n			ç		TIVE IC
PI ATANTHERA HYPERBOREA	BOREAL BOG ORCHID						<u>ک</u> د		TIVO IO
DI ATANTHERA PURPURASCENS	SLENDER BOG ORCHID			(ž		TLAN.
POI FMONIUM FLAVUM	PINALENO JACOBS LADDER			တ (PLAIN!
POTENTILLA ALBIFLORA	WHITE-FLOWERED CINQUEFOIL	l -		n			ij		PI ANT
PURSHIA SUBINTEGRA	ARIZONA CLIFF ROSE	<u>።</u>		c			2 2		PI ANT
RUMEX ORTHONEURUS	BLUMER'S DOCK	္က ဖ		n	د		2		PLANT
SALVIA AMISSA	ARAVAIPA SAGE	သွ		n	n		Q		Pi ANT
SCHIEDEELLA PARASITICA	FALLEN LADIES'-TRESSES	Ċ				C/VI	6		REPTII F
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	٥) \$			

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002	2002						Page:12
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
							-		
COUNTYNAME: GRAHAM									
PHRYNOSOMA CORNUTUM	TEXAS HORNED LIZARD	SC			တ				REPTILE
THAMNOPHIS RUFIPUNCTATUS	NARROW-HEADED GARTER SNAKE	SC		S		WC			REPTILE
COUNTYNAME: GREENLEE									
BUFO MICROSCAPHUS MICROSCAPHUS	ARIZONA TOAD	SC		S					AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICAHUA LEOPARD FROG	PŢ		S		WC			AMPHIBIAN
RANA PIPIENS	NORTHERN LEOPARD FROG			S		WC		2	AMPHIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	သွ ပ		တပ		S &			AMPHIBIAN
ACCIPITER GENTILIS	NOK HEKN GOSHAWK	၁၈		n u		ر ا ا		4	BIRD
BOTEOGALLOS ANTIRACINOS	YELLOW-BILLED CLICKOO	C		ာဟ) }		m	BIRD
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	믜	>-	S		WC		2	BIRD
EUPTILOTIS NEOXENUS	EARED TROGON			S					BIRD
FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON	SC		တ		S S		4	BIRD
PANDION HALIAETUS	OSPREY	<u>-</u>	>	ú		ე (c	BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTED OWE	٦ ٢		o	ú) }		ာ	UNIG HOLI
AGOSIA CHRYSOGASIER	CENERAL DACE	S 6			o v				FISH
CALCALOMOS CERIOS	SONORA SLICKER	SC			o vo				FISH
GILA INTERMEDIA	GILA CHUB	ပ		S)	WC			FISH
GILA ROBUSTA	ROUNDTAIL CHUB	SC		S		WC		7	FISH
MEDA FULGIDA	SPIKEDACE	LT	>	S		WC			FISH
ONCORHYNCHUS APACHE	APACHE (ARIZONA) TROUT	」		S		WC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	သွ ၂	;		S	;			FISH
TIAROGA COBITIS	LOACH MINNOW	<u>-</u> .	>- :	တ (S K		(FISH
XYRAUCHEN TEXANUS	RAZORBACK SUCKER	ብ ያ	>-	က ပ	٥	N N		7	FISH
CICINDELA OREGONA MARICOFA	WARICOPA HGER BEETLE WHITE MOLINIAINS WATED DENINS BEETLE	ی ر		ງ ປ	o				INVERTERRATE
PSEPHENOS MONTANOS	CORATED WESTERN MASTER BAT	ွ (ס					MAMMAI
MYOTS TENDING CALL CINIOUS	OCCULT LITT E BROWN BAT	သွင			V.				MAMMAL
ZAPLIS HIDSONIUS I LITEUS	NEW MEXICAN JUMPING MOUSE	SC		S	,	WC			MAMMAL
ALLIUM BIGELOVII	BIGELOW ONION						SR		PLANT
ALLIUM GOODDING!!	GOODDING ONION	SC		S			£	ო	PLANT
CALYPSO BULBOSA	WESTERN FAIRY SLIPPER						SR		PLANT
COELOGLOSSUM VIRIDE VAR VIRESCENS	AMERICAN FROG ORCHID						SR		PLANT
CONIOSELINUM MEXICANUM	MEXICAN HEMLOCK PARSLEY	SC		တ			,		PLANT
CYPRIPEDIUM PARVIFLORUM VAR PUBESCENS	YELLOW LADY'S-SLIPPER	Ċ					Ξ (PLANI
ERIOGONUM CAPILLARE	SAN CARLOS WILD-BUCKWHEA!	ט מ ט		U			ኢ ያ		PLANI
GENTIANELLA WISLIZENI	WISLIZEINI GENTIAN	<u>ر</u>		o			بر در در		
GOOD TERA REFEINS	CHIHIJAHUAN STICKSEED			S			Ś		PLANT
HEICHERA GLOMERULATA	ARIZONA ALUM ROOT			တ					PLANT
LUPINUS LEMMONII	LEMMON'S LUPINE			S					PLANT

Special Status Species by County for Arizona AGFD, HDMS	HDMS	January 15, 2002	002						Page:13
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: GREENLEE									
PENSTEMON LINARIOIDES SSP MAGUIREI PENSTEMON RAMOSUS PENSTEMON SUPERBUS PLATANTHERA HYPERBOREA	MAGUIRE'S PENSTEMON BRANCHING PENSTEMON SUPERB BEARDTONGUE BOREAL BOG ORCHID			ဟ ဟ			SR SR SR		PLANT PLANT PLANT PLANT PLANT
PLATANTHERA PURPURASCENS RUMEX ORTHONEURUS SCHIEDEELLA PARASITICA SENECIO QUAERENS TRIFOLIUM NEUROPHYLLUM ZIGADENUS VIRESCENS THAMNOPHIS RUFIPUNCTATUS	SLENDER BOG ORCHID BLUMER'S DOCK FALLEN LADIES'-TRESSES GILA GROUNDSEL WHITE MOUNTAINS CLOVER GREEN DEATH CAMAS NARROW-HEADED GARTER SNAKE	S S S		თ თთ თ		N N	SR SR SR SR SR		PLANI PLANT PLANT PLANT PLANT REPTILE
COUNTYNAME: LA PAZ									
BUFO MICROSCAPHUS MICROSCAPHUS RANA YAVAPAIENSIS ARDEA ALBA	ARIZONA TOAD LOWLAND LEOPARD FROG GREAT EGRET	လ လ		იი ი		S S S		ო	AMPHIBIAN AMPHIBIAN BIRD BIRD
COCCYZUS AMERICANUS EMPIDONAX TRAILLII EXTIMUS FALCO PEREGRINUS ANATUM	YELLOW-BILLED CUCKOO SOUTHWESTERN WILLOW FLYCATCHER AMERICAN PEREGRINE FALCON	SEST	>-	တတတ		0 0 0 8 % %		0.4	BIRD BIRD BIRD
HALIAEE I US LEUCUCEFFIALUS LATERALLUS JAMAICENSIS COTURNICULUS PLEGADIS CHIHI RALLUS LONGIROSTRIS YUMANENSIS	CALIFORNIZE CALIFORNIZE WHITE-FACED IBIS YUMA CLAPPER RAIL	S S E E	>-	S	Ø	o oo			BIRD BIRD FISH
CYPRINODON MACULARIUS GILA ELEGANS POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	DESERT FOFTST BONYTAIL GILA TOPMINNOW	쁜쁜	·> >	တ		A WC		- 2	FISH FISH FISH
XYRAUCHEN TEXANUS EUMOPS PEROTIS CALIFORNICUS LASIURUS XANTHINUS MACROTUS CALIFORNICUS	RAZURBACH SUCHEN GREATER WESTERN MASTIFF BAT WESTERN YELLOW BAT CALIFORNIA LEAF-NOSED BAT CAVE MYOTIS	S S S S S S S S S S S S S S S S S S S			တ တ	WC WC			MAMMAL MAMMAL MAMMAL MAMMAL
MYOTIS VLEATEN MYOTIS VUMANENSIS NYCTINOMOPS FEMOROSACCUS PLECOTUS TOWNSENDII PALLESCENS MAMMILLARIA VIRIDIFLORA OPUNTIA ECHINOCARPA	YUMA MYOTIS POCKETED FREE-TAILED BAT PALE TOWNSEND'S BIG-EARED BAT VARIED FISHHOOK CACTUS STRAW-TOP CHOLLA SCALY SANDPIANT	S S			ഗ ഗ		SR SH	4	MAMMAL MAMMAL PLANT PLANT PLANT
PHOLISMA ARENAKIUM CHARINA TRVIRGATA GRACIA GOPHERUS AGASSIZII (SONORAN POPULATION) HELODERMA SUSPECTUM CINCTUM UMA SCOPARIA		8 8 8 8 8		σ	ω a	MC WC			REPTILE REPTILE REPTILE REPTILE

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002						Page: 14
Scientific Name	Common Name	*Critical ESA Habitat	ical tat USFS	S BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: MARICOPA								
		ć	ú					
BUFO MICROSCAPHUS MICROSCAPHUS	ARIZONA LOAD	ာ	o		CIVI			
GASTROPHRYNE OLIVACEA	GREAL PLAINS NARROWINGUIN 10AD) (*			
PTERNOHYLA FODIENS	LOWLAND BURKOWING I KEEFKUG	Ó	C) (* \$			ANTIBIAN ANTIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	SC	n		ر ا			AMPHIBIAN
ARDEA ALBA	GREAT EGRET				×			BIRD
ATHENE CUNICULARIA HYPUGAEA	WESTERN BURROWING OWL	SC		S				BIRD
BUTEOGALLUS ANTHRACINUS	COMMON BLACK-HAWK		S		WC WC			BIRD
CHARADRIUS ALEXANDRINUS NIVOSUS	WESTERN SNOWY PLOVER		S		MC			BIRD
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	ပ	S		WC		က	BIRD
DENDROCYGNA AUTUMNALIS	BLACK-BELLIED WHISTLING-DUCK				WC WC			BIRD
EGRETTA THULA	SNOWY EGRET				WC			BIRD
EMPLOONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	Y E	S		WC		7	BIRD
FAI CO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON				MC		4	BIRD
GI ALICIDILIM BRASILIANIM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL	, ⊢ E			MC			BIRD
HAI IAFETIIS I FIICOCEPHALUS	BALD EAGLE	ᆸ	S		MC			BIRD
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE				NC WC			BIRD
IXOBRYCHUS EXILIS HESPERIS	WESTERN LEAST BITTERN	SC			WC			BIRD
RALLIS LONGIROSTRIS YUMANENSIS	YUMA CLAPPER RAIL	끸			MC MC			BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	, L1	S		WC		က	BIRD
AGOSIA CHRYSOGASTER	LONGFIN DACE	SC		S				FISH
CATOSTOMIS CLARKI	DESERT SUCKER	SC		S				FISH
CATOSTOMUS INSIGNIS	SONORA SUCKER	SC		S				FISH
CYPRINODON MACULARIUS	DESERT PUPFISH	LE Y			WC			FISH
GII A FI EGANS	BONYTAIL	LE			WC		-	FISH
GILA ROBUSTA	ROUNDTAIL CHUB	SC	S		WC		7	FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	GILA TOPMINNOW	ᄪ			WC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE			S	1		,	FISH
XYRAUCHEN TEXANUS	RAZORBACK SUCKER		s ≻		NC WC		7	FISH
CICINDELA OREGONA MARICOPA	MARICOPA TIGER BEETLE	SC	S	S				INVERTEBRATE
LIMENITIS ARCHIPPUS OBSOLETA	OBSOLETE VICEROY BUTTERFLY		y (INVERTEBRATE
SONORELLA ALLYNSMITHI	SQUAW PEAK TALUSSNAIL	သွ	·Ω (:			
ANTILOCAPRA AMERICANA SONORIENSIS	SONORAN PRONGHORN	<u>"</u>	S)		S S			MANAMAL
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	SC			(MAMIMAL
LASIURUS BLOSSEVILLII	WESTERN RED BAT				S S			MANAMAL
LASIURUS XANTHINUS	WESTERN YELLOW BAT	!	() (: «			
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	끸	S		S X			MAMIMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC		တ	NC MC			MAMMAL
MYOTIS VELIFER	CAVE MYOTIS	SC		S				MAMMAL
MYOTIS YUMANENSIS	YUMA MYOTIS	SC		(MAMMAL
NYCTINOMOPS FEMOROSACCUS	POCKETED FREE-TAILED BAT	;		S				MAMMAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	သင္တ				Ċ	4	IVIAIVINIAL
ABUTILON PARISHII	PIMA INDIAN MALLOW	<u>ာ</u> .	o o			۲ S		PLAN!
AGAVE ARIZONICA	ARIZONA AGAVE	<u> </u>	n c			2 2		PLAIN!
AGAVE DELAMATERI	TONTO BASIN AGAVE	S S	<i>,</i> ,			2		

Special Status Species by County for Arizona AGFD, HDMS	HDMS	January 15, 2002	002						Page:15
Ocientific Name	Common Name	ESA	*Critical Habitat	USFS	ВСМ	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: MARICOPA									
AGAVE MURPHEYI AGAVE TOUMEYANA VAR BELLA ALLIUM BIGELOVII	HOHOKAM AGAVE TOUMEY AGAVE BIGELOW ONION	SC		S	თ თ		SR SR		PLANT PLANT PLANT PLANT
BERBERIS HARRISONIANA ERIGERON PISCATICUS ERIOGONUM RIPLEYI FREMONTODENDRON CALIFORNICUM HEUCHERA EASTWOODIAE LOTUS ALAMOSANUS MABRYA ACERIFOLIA MAMMILLARIA VIRIDIFLORA	KOFA BARBERRY FISH CREEK FLEABANE RIPLEY WILD-BUCKWHEAT FLANNEL BUSH EASTWOOD ALUM ROOT ALAMOS DEER VETCH MAPLELEAF FALSE SNAPDRAGON VARIED FISHHOOK CACTUS STRAW-TOP CHOLLA	SS		აა ააა	ഗഗ ഗ		SR SR SR SR		PLANT PLANT PLANT PLANT PLANT PLANT PLANT
OPUNTIA ECHINOCARPA OPUNTIA PHAEACANTHA VAR FLAVISPINA PERITYLE SAXICOLA PURSHIA SUBINTEGRA TUMAMOCA MACDOUGALII VAUQUELINIA CALIFORNICA SSP SONORENSIS CHARINA TRIVIRGATA GRACIA CNEMIDOPHORUS BURTI XANTHONOTUS EUMECES GILBERTI ARIZONENSIS GOPHERUS AGASSIZII (SONORAN POPULATION) PHYLLORHYNCHUS BROWNI LUCIDUS SAUROMALUS OBESUS TUMIDUS THAMNOPHIS EQUES MEGALOPS XANTUSIA VIGILIS ARIZONAE	FISH CREEK ROCK DAISY ARIZONA CLIFF ROSE TUMAMOC GLOBEBERRY A ARIZONA ROSEWOOD DESERT ROSY BOA REDBACK WHIPTAIL ARIZONA SKINK SONORAN DESERT TORTOISE MARICOPA LEAFNOSE SNAKE ARIZONA CHUCKWALLA MEXICAN GARTER SNAKE ARIZONA NIGHT LIZARD	SS		თ თ თთთ თ თთ	ν ν ν ν ν	N N N	S H S S S S S S S S S S S S S S S S S S		PLANT PLANT PLANT PLANT PLANT REPTILE REPTILE REPTILE REPTILE REPTILE
COUNTYNAME: MOHAVE BUFO MICROSCAPHUS MICROSCAPHUS RANA ONCA RANA YAVAPAIENSIS ACCIPITER GENTILIS ACCIPITER GENTILIS ATHENE CUNICULARIA HYPUGAEA BUTEOGALLUS ANTHRACINUS COCCYZUS AMERICANUS EMPIDONAX TRAILLII EXTIMUS FALCO PEREGRINUS ANATUM HALIAEETUS LEUCOCEPHALUS RALLUS LONGIROSTRIS YUMANENSIS STRIX OCCIDENTALIS LUCIDA AGOSIA CHRYSOGASTER CATOSTOMUS CLARKI	ARIZONA TOAD RELICT LEOPARD FROG NORTHERN LEOPARD FROG LOWLAND LEOPARD FROG NORTHERN GOSHAWK CLARK'S GREBE WESTERN BURROWING OWL COMMON BLACK-HAWK YELLOW-BILLED CUCKOO SOUTHWESTERN WILLOW FLYCATCHER AMERICAN PEREGRINE FALCON BALD EAGLE YUMA CLAPPER RAIL MEXICAN SPOTTED OWL LONGFIN DACE DESERT SUCKER	SC SC C C C C C C C C C C C C C C C C C	> >	თთთთ თთთთთ თ	w ww	00000 0000000		0 44 604 6	AMPHIBIAN AMPHIBIAN AMPHIBIAN BIRD BIRD BIRD BIRD BIRD BIRD BIRD BIRD

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Special Status Species by County for Arizona	

Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: MOHAVE								
CATOSTOMUS INSIGNIS	SONORA SUCKER	SC		S				FISH
CATOSTOMUS LATIPINNIS	FLANNELMOUTH SUCKER		S					FISH
GILA CYPHA	HUMPBACK CHUB				MC MC		2	FISH
GILA ELEGANS	BONYTAIL	≻ "			WC		-	FISH
GILA ROBUSTA	ROUNDTAIL CHUB		S		WC		2	FISH
GILA SEMINUDA	VIRGIN RIVER CHUB	رو د	S		WC			FISH
LEPIDOMEDA MOLLISPINIS MOLLISPINIS	VIRGIN SPINEDACE	SC			WC			FISH
PLAGOPTERUS ARGENTISSIMUS	WOUNDFIN	≻ 끸			WC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	SC		S				FISH
XYRAUCHEN TEXANUS	RAZORBACK SUCKER	≻ =	S		WC		2	FISH
CICINDELA OREGONA MARICOPA	MARICOPA TIGER BEETLE	SC	S	S				INVERTEBRATE
PYRGULOPSIS BACCHUS	GRAND WASH SPRINGSNAIL	SC	S	S				INVERTEBRATE
PYRGULOPSIS CONICA	KINGMAN SPRINGSNAIL	SC	S	တ				INVERTEBRATE
PYRGULOPSIS DESERTA	DESERT SPRINGSNAIL		S	S				INVERTEBRATE
EUDERMA MACULATUM	SPOTTED BAT	SC		S	ΝC			MAMMAL
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	SC						MAMMAL
IDIONYCTERIS PHYLLOTIS	ALLEN'S BIG-EARED BAT	SC		S				MAMMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC		S	MC			MAMMAL
MICROTUS MEXICANUS HUALPAIENSIS	HUALAPAI MEXICAN VOLE	믜			WC			MAMMAL
MYOTIS CILIOLABRUM	WESTERN SMALL-FOOTED MYOTIS	SC		S				MAMMAL
MYOTIS THYSANODES	FRINGED MYOTIS	SC		S				MAMMAL
MYOTIS VELIFER	CAVE MYOTIS	SC		S				MAMMAL
MYOTIS VOLANS	LONG-LEGGED MYOTIS	SC		S				MAMMAL
MYOTIS YUMANENSIS		SC						MAMMAL
NYCTINOMOPS FEMOROSACCUS	POCKETED FREE-TAILED BAT	,		S				MAMMAL
NYCTINOMOPS MACROTIS	BIG FREE-TAILED BAT	SC		တ				MAMMAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC					4	MAMMAL
ALLIUM BIGELOVII	BIGELOW ONION	1				SR		PLANT
ARCTOMECON CALIFORNICA	LAS VEGAS BEARPOPPY	သင	,			SR		PLANT
ASTRAGALUS AMPULLARIUS	GUMBO MILK-VETCH	SC	တ					PLANT
ASTRAGALUS GEYERI VAR TRIQUETRUS	BEAVER DAM MILK-VETCH	သ				1		PLANT
ASTRAGALUS HOLMGRENIORUM	HOLMGREN MILK-VETCH	ш		တ		Ξ		PLAN
ASTRAGALUS NEWBERRYI VAR AQUARII				S				PLANT
ASTRAGALUS TOANUS VAR SCIDULUS	A TOANA MILKVETCH			S				PLANT
CAMISSONIA BREVIPES	GOLDEN SUNCUP	SC						PLANT
CAMISSONIA EXILIS	SLENDER EVENING-PRIMROSE	SC		S		SR		PLANT
CAMISSONIA SPECUICOLA SSP HESPERIA	GRAND CANYON EVENING-PRIMROSE	SC						PLANT
CIRSIUM VIRGINENSIS	VIRGIN THISTLE	SC				SR		PLANT
CORYPHANTHA MISSOURIENSIS	MISSOURI CORYCACTUS					SR		PLANT
CYCLADENIA HUMILIS VAR JONESII	JONES' CYCLADENIA	<u></u>				HS		PLANT
ENCELIOPSIS ARGOPHYLLA	SILVERLEAF SUNRAY			S				PLANT
ERIOGONUM MORTONIANUM	MORTON WILD-BUCKWHEAT	SC	S			SR		PLANT
ERIOGONUM THOMPSONAE VAR ATWOODII	ATWOOD WILD-BUCKWHEAT	SC	S			SR		PLANT
ERIOGONUM VISCIDULUM	STICKY BUCKWHEAT	SC						PLANT

Special Status Species by County for Arizona AGFD, HDMS		January 15, 2002						Page: 17
	Common Name	*Critical ESA Habitat	USFS	ВГМ	WSCA	NPL	NESL	Taxonomic Group
Scientific Name								
COUNTYNAME: MOHAVE						(ļ.
	GRAND CANYON FLAVERIA					SR		PLANT
FLAVERIA MCDOGALLII	ELANNEL BUSH			S		X X		PLAN.
FREMONIODENDRON CALIFORNICON	BROADLEAF LUPINE		ဟ			00		PLAN!
LOPINOS LATIL OLIOS OS ELOCATOR	VARIED FISHHOOK CACTUS					ر د د		
OPINTIA RASII ARIS VAR AUREA	YELLOW BEAVERTAIL					ر د در		PI ANT
OPINTIA ECHINOCARPA	STRAW-TOP CHOLLA					SS		PLANT
OPUNTIA NICHOLII	NAVAJO BRIDGE CACTUS	ر	v:	S		HS SH	က	PLANT
PEDIOCACTUS PEEBLESIANUS VAR	FICKEISEN PLAINS CACTUS)))		9		t d
FICKEISENIAE	SII ER PINCUSHION CACTUS	L				Ϋ́ S		PLAN!
PEDIOCACTUS SILERI	BEAVER DAM SCURF PEA	SC						PLAN!
	KANE SCURF-PEA	SC		•		C		FINAIG
PEDIOMELOM ETIFSILOM DENCTEMON AI BOMARGINATIIS	WHITE-MARGINED PENSTEMON	သင		S		ב מ		PI ANT
PENSILEMON ALDOWN CONTROLL DENISTEMON RICOLOR SSP ROSEUS	CERBAT BEARDTONGUE	SC (၂)	¢	c		5 0		PLANT
PENSTEMON DISTANS	MT. TRUMBULL BEARDTONGUE	SC	n	n u		<u>.</u>		PLANT
PENSTEMON PETIOLATUS	SHEEP RANGE BEARDTONGUE			o v				PLANT
PHACELIA PARISHII	PARISH'S PHACELIA		v:)				PLANT
POLYGALA RUSBYI	HUALAPAI MILKWORT	щ	o			R		PLANT
PURSHIA SUBINTEGRA	ARIZONA CLIFF ROSE	SC	S	S		SR		PLANT
ROSA STELLATA SSP ABYSSA	GRAND CANYON ROSE)				SR		PLANT
SCLEROCACTUS PARVIFLORUS	DESERT MOONPOD			S				PLANI
SELINOCARPUS NEVADENSIS	BLACKROCK GROUND DAISY			S				PLAN!
TOWNSENDIA SMITHI	THREE HEARTS			တ		Ç		PLAN I
TRICARDIA WATSONII	OUR LORDS CANDLE		((አ አ		PEAN F
YUCCA WHIPPLE! CHARINA TRIVIRGATA GRACIA		သွ	က ပ	တ				REPTILE
CROTAL US VIRIDIS ABYSSUS	GRAND CANYON RATTLESNAKE		n		0///			REPTILE
GOPHERUS AGASSIZII (MOHAVE POPULATION)	MOHAVE DESERT TORTOISE	≻ ⁽) S S			REPTILE
GOPHERUS AGASSIZII (SONORAN POPULATION)		ာ <u>ဖ</u>		۵)			REPTILE
HELODERMA SUSPECTUM CINCTUM LAMPROPELTIS PYROMELANA INFRALABIALIS	BANDED GILA MONSTER UTAH MOUNTAIN KINGSNAKE	ò	တ	-				REPTILE
COLINTYNAME: NAVAJO								
		SC	S					AMPHIBIAN
BUFO MICROSCAPHUS MICROSCAPHUS	AKIZONA LOAD	ΡΓ	S		WC			AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICATION LEGITATION TINOS		S		MC		7	AMPHIBIAN
RANA PIPIENS	NORTHERN GOSHAWK	SC	ဟ		NC WC		4	SIRO Cala
ACCIPITER GENILIS	WESTERN RURROWING OWL	SC		S				BIRU
ATHENE CUNICULARIA HYPUGAEA	FERRI GINOLIS HAWK	SC			NC NC		ო ·	SIKO GGIG
BUTEO REGALIS	AMERICAN PEREGRINE FALCON	sc	တ		NC AC		4	BIRU
PALCO PENEGRINOS CIVATOS.	OSPREY		c) 		۳	BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	۲ ا	o vo	v.	S X)	FISH
CATOSTOMUS SP 3	LITTLE COLORADO SUCKER)	,)				

Special Status Species by County for Arizona A	AGFD, HDMS	January 15, 2002						Page:18
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: NAVAJO								
X + 3 1 2 4 1 3	ROUNDTAIL CHUB	SC	S		WC		2	FISH
I FPIDOMEDA VITTATA	LITTLE COLORADO SPINEDACE	\ L1 \	S		WC			FISH
ANODONTA CALIFORNIENSIS	CALIFORNIA FLOATER	SC	S					INVERTEBRATE
CICINDELA OREGONA MARICOPA	MARICOPA TIGER BEETLE	SC	S	S				INVERTEBRATE
MICROTUS MEXICANUS NAVAHO	NAVAJO MEXICAN VOLE	SC	S		WC WC		4	MAMMAL
MYOTIS LUCIFUGUS OCCULTUS	ш	SC		S				MAMMAL
PEROGNATHIS FI AVIIS GOODPASTERI	SPRINGERVILLE POCKET MOUSE	SC	S					MAMMAL
PI ECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC					4	MAMMAL
AMSONIA PEEBLESII	PEEBLES BLUE STAR			S			4	PLANT
ASCLEPIAS WELSHII	WELSH'S MILKWEED	LT Y				HS	4	PLANT
ASTRAGALUS XIPHOIDES	GLADIATOR MILK VETCH					SR		PLANT
CAREX SPECUICOLA	NAVAJO SEDGE	≻				R	က	PLANT
CHRYSOTHAMNUS MOLESTUS	TUSAYAN RABBITBRUSH	SC	တ					PLANT
ERRAZURIZIA ROTUNDATA	ROUNDLEAF ERRAZURIZIA			S		SR	4	PLANT
PEDIOCACTUS PAPYRACANTHUS	PAPER-SPINED CACTUS	SC				SR.		PLANI
PEDIOCACTUS PEEBLESIANUS VAR	PEEBLES NAVAJO CACTUS	当				Y.		PLANT
PEEBLESIANUS			U					PI ANT
PENSTEMON NUDIFLORUS	FLAGSTAFF BEAKUTONGUE	Ç	o				ď	PI ANT
PLATANTHERA ZOTHECINA	ALCOVE BOG-ORCHID	ာ့				SR	,	PLANT
SCLEROCACTOS PARVIFLOROS	MARKON ONDERD SNAKE	Ċ	ď		WC	5		REPTILE
THAMINOPHIS EQUES MEGALOTS THAMNOPHIS RUFIPUNCTATUS	NARROW-HEADED GARTER SNAKE	SC	တ		MC			REPTILE
COUNTYNAME: PIMA								
CASTBOBHBYNE OF WACEA	GREAT PLAINS NARBOWMOUTH TOAD				WC			AMPHIBIAN
	LOWI AND BURROWING TREFEROG				WC			AMPHIBIAN
DANA CHIBICAHI IENSIS	CHIRICAHIJA I FOPARD FROG	PT	S		WC			AMPHIBIAN
RANA VAVAPAIENSIS	LOWLAND LEOPARD FROG	SC	S		WC			AMPHIBIAN
ACCIPITER GENTILIS	NORTHERN GOSHAWK	SC	S		MC		4	BIRD
AIMOPHILA QUINQUESTRIATA	FIVE-STRIPED SPARROW		S					BIRD
AMMODRAMUS BAIRDII	BAIRD'S SPARROW	SC			MC			BIKD
ASTURINA NITIDA MAXIMA	NORTHERN GRAY HAWK	SC	တ	S	WC			BIKD
ATHENE CUNICULARIA HYPUGAEA	WESTERN BURROWING OWL	SC		S				BIRD
BUTEOGALLUS ANTHRACINUS	COMMON BLACK-HAWK		S		WC			BIRD
CARACARA CHERIWAY	CRESTED CARACARA				NC NC			BIRD
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	ပ !	တ		S S		က	BIRD
COLINUS VIRGINIANUS RIDGWAYI	MASKED BOBWHITE	Щ			ن ج ج			טעום עם מום
DENDROCYGNA AUTUMNALIS	BLACK-BELLIED WHISTLING-DUCK	(C	S N			OSIB Cala
DENDROCYGNA BICOLOR	FULVOUS WHISTLING-DUCK	သွ ဖွ		'n	9			ONIA Cala
EMPIDONAX FULVIFRONS PYGMAEUS	NORTHERN BUFF-BREASTED FLYCATCHER	< ا ا	U		ر ۱		c	
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCALCHER		o 0) (}		1 -	BIRD
FALCO PEREGRINUS ANATUM		- ۲	o) } }		+	BIRD
GLAUCIDIUM BRASILIANUM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL) }			

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002	2						Page:19
Scientific Name	Common Name	*Cr ESA Hal	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: PIMA									
PACHYRAMPHUS AGLAIAE	ROSE-THROATED BECARD					S X			BIRD
PANDION HALIAETUS	OSPREY		>	U) () * *		c:	BIRD
STRIX OCCIDENTALIS LUCIDA	MEXICAN SPOTTED OWL	-	>-	o) ())	BIRD
TYRANNUS CRASSIROSTRIS	THICK-BILLED KINGBIRD) X			BIRD
TYRANNUS MELANCHOLICUS	TROPICAL KINGBIRD	Ç			ď) :			FISH
AGOSIA CHRYSOGASTER			>)	MC			FISH
CYPRINODON EREMUS	QUITOBAQUITO DESEKT PUPFISH		- >-			NC N			FISH
CYPRINODON MACULARIUS				S		WC			FISH
GILA INTERMEDIA	GILA CHUB	, 믜				WC			FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	ARIZONA GIANT SKIPPER			S					INVERTEBRATE
AGATHYMIN POLING!	POLING'S GIANT SKIPPER			S					INVERTEBRATE
ARGIA SABINO	SABINO CANYON DAMSELFLY	SC		so c					INVERTERRATE
CALEPHELIS RAWSONI ARIZONENSIS	ARIZONA METALMARK			n c					INVERTERRATE
LIMENITIS ARCHIPPUS OBSOLETA	OBSOLETE VICEROY BUTTERFLY			n u					INVERTEBRATE
NEOPHASIA TERLOOTII	CHIRICAHUA PINE WHITE	ر		כ					INVERTEBRATE
SONORELLA EREMITA	SAN XAVIER TALUSSNAIL	ွ ေ		v.					INVERTEBRATE
TRYONIA QUITOBAQUITAE	QUITOBAQUII O IRYONIA	3 4		ာတ		WC			MAMMAL
ANTILOCAPRA AMERICANA SONORIENSIS	SONOKAN PRONGHORN	SC			S	MC			MAMMAL
CHOERONYCTERIS MEXICANA	MEXICAN LONG-TONGOED BAT	၁၀							MAMMAL
EUMOPS PEROTIS CALIFORNICUS	UNDERWOOD'S MASTIFF BAT	SC			S				MAMMAL
EUMOPS UNDERWOOD!	WESTERN RED BAT					NC.			MAMMAL
LASIURUS BEUSSEVIEE!!	WESTERN YELLOW BAT			(S &			MAMMAL
LASIONOS ARIVININOS I EDTONYCTERIS CIIRASOAE YERBABUENAE	LESSER LONG-NOSED BAT	<u>"</u>		တ	Ć	υ (* ×			MAMMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	သင်္လ			ທ ດ	ر *			MAMMAL
MYOTIS LUCIFUGUS OCCULTUS	OCCULT LITTLE BROWN BAT	ک در			ე ഗ				MAMMAL
MYOTIS VELIFER	CAVE MYOTIS	8			S				MAMMAL
NYCTINOMOPS FEMOROSACCUS	POCKETED TREET OFFICE ON	믜	z	S		WC WC			MAMMAL
PANTHERA ONCA	PALE TOWNSEND'S BIG-EARED BAT	SC						4	MAMMAL
PLECOTOS TOWNSEIVOI FALLESCENS	YELLOW-NOSED COTTON RAT	SC					Ċ		MAMMAL
SIGMODON OCHROGINATIOS	PIMA INDIAN MALLOW	SC		S			% G		PLAN I
ABO ILCON FAINS III. ARI ITII ON THURBER!	THURBER INDIAN MALLOW			c			አ		PI ANT
ACACIA SMALLII	SWEET ACACIA	(n u	ú		Ų E		PLANT
AGAVE PARVIFLORA SSP PARVIFLORA	SANTA CRUZ STRIPED AGAVE	ည္က ဖ		n v	o		2 Y		PLANT
AGAVE SCHOTTII VAR TRELEASEI	TRELEASE AGAVE	ງ ເ		o v			<u>£</u>	က	PLANT
ALLIUM GOODDINGII		3)			SR		PLANT
ALLIUM PLUMMERAE	PLUMIMER CINION	SC		S			HS		PLANT
AMOREUXIA GONZALEZII AMSONIA GRANDIFI ORA	LARGE-FLOWERED BLUE STAR	SC		တ			<u>.</u>		PLANI
AMSONIA KEARNEYANA	KEARNEY'S BLUE STAR	끸		o			Ľ		PI ANT
ASCLEPIAS LEMMONII	LEMMON MILKWEED			י	S				PLANT
ASPLENIUM DALHOUSIAE	DALHOUSE SPLEENWON!								

Special Status Species by County for Arizona AGFI	AGFD, HDMS	January 15, 2002					Page: 20
Scientific Name	Sandy norman	*Critical	((Taxonomic
Scientific Marite	COLLINGING	ESA Habitat	USFS	BLM WSCA	NPL	NESL	Group
COUNTYNAME: PIMA							
BERBERIS HARRISONIANA	KOFA BARBERRY			S			FIAN
BOERHAVIA MEGAPTERA	TUCSON MOUNTAIN SPIDERLING		S				
CAPSICUM ANNUUM VAR GLABRIUSCULUM	CHILTEPIN		S				PLANT DI ANIT
CAREX CHIHUAHUENSIS	A SEDGE		S				LAN.
CAREX ULTRA	ARIZONA GIANT SEDGE		ဟ	v:			FLANT
CORYPHANTHA SCHEERI VAR ROBUSTISPINA	PIMA PINEAPPLE CACTUS	Ш		1	U I		FLAN
DALEA TENTACULOIDES	GENTRY INDIGO BUSH	SC	S	v.	S Y		PLANT
ECHINOCACTUS HORIZONTHALONIUS VAR	NICHOL TURK'S HEAD CACTUS	믜		1	R R		PLANT
FORMODERELIS FASCICILIATIS	MAGENTA-FLOWER HENCEHOG CACTUS				ĵ		
ECHINOMASTUS ERECTOCENTRUS VAR ACUNENSIS	ACUNA CACTUS	O			XX SY		PLANT PLANT
ECHINOMASTUS ERECTOCENTRUS VAR	NEEDLE-SPINED PINEAPPLE CACTUS	sc	S		SR		PLANT
FRIGERON ARISOLIUS			U				
FRIOGONI M CAPILLARE	SAN CABLOS WII D-BLICKWHFAT	JS	þ		C		PLANT
EUPHORBIA GRACILLIMA	MEXICAN BROOMSPURGE	3	v:		40		PLANT
FEROCACTUS CYLINDRACEUS VAR	GOLDEN BARREL CACTUS)		SR		PLANT PLANT
EASTWOODIAE							; ;
GRAPTOPETALUM BARTRAMII	BARTRAM STONECROP	SC	တ	S	SR		PLANT
HACKELIA URSINA	CHIMUAHUAN STICKSEED		တ				PI ANT
HEDEOMA DENTATUM	MOCK-PENNYROYAL		S				PI ANT
HERMANNIA PAUCIFLORA	SPARSELEAF HERMANNIA		တ				PI ANT
HETEROTHECA RUTTERI	HUACHUCA GOLDEN ASTER	SC	S	S			PI ANT
HEXALECTRIS REVOLUTA	CHISOS CORAL-ROOT		S	S			PLANT
HEXALECTRIS SPICATA	CRESTED CORAL ROOT				SR		PLANT
LILAEOPSIS SCHAFFNERIANA VAR RECURVA	HUACHUCA WATER UMBEL	> 밀			HS		PLANT
LILIUM PAKKYI	LEMMON LILY	သွ	တ		SR		PLANT
LISTERA CONVALLARIOIDES	BROADLEAF IWAYBLADE				SR		PLANT
			(SR		PLANT
LUPINUS HUACHUCANUS	TOACHOCA MOON AND LOTINE		S				PLANT
LYNICOMA MICROFITYICA VAR I TORNBITKI					SR		PLANT
MALAXIS IENUIS	SCENDER ADDERS MOUTH				SR		PLANT
MAMMILLAKIA MAINIAE	COUNTER CLOCKWISE FISHHOOK CACTUS		တ		SR		PLANT
MAMMILLARIA THORNBERI	THORNBER FISHHOOK CACTUS				SR		PI ANT
MAMMILLARIA VIRIDIFLORA	VARIED FISHHOOK CACTUS				SR		PI ANT
MANIHOT DAVISIAE	ARIZONA MANIHOT		တ				PI ANT
MATELEA CORDIFOLIA	SONORAN MILKWEED VINE		S				PI ANT
METASTELMA MEXICANUM	WIGGINS MILKWEED VINE	သင	တ				PLANT
MUHLENBEKGIA DUBIOIDES	BOX CANYON MUHLY		တ ၊				PLANT
MUTITION OF A KIND THE A	WEEPING MOHLY		ဟ				PLANT
NEOEVAINOIA O I RIA I A	DAHLIA KOOTED CEREUS	,			SR		PLANT
NO! HOLAENA LEMMON!!	LEMMON CLOAK FERN	SC					PI ANT
OPUNITA RELVINENSIS	KELVIN CHOLLA				SR		PLANT
OPUNITA PHAEACANTHA VAR FLAVISPINA					SR		PI ANT
							;

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Special Status Species by County for Arizona AGFD, HDMS

Special Status Species by County for Arizona AGFD.	AGFD, HDMS	January 15, 2002	102						Page:21
Scientific Name	Common Name	ESA F	*Critical Habitat U	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: PIMA									
OPUNTIA VERSICOLOR	STAG-HORN CHOLLA			ď			SR		PLANT PI ANT
PASSIFLORA FOETIDA PECTIS IMBERBIS	BEARDLESS CHINCH WEED	SC		ာဟ					PLANT
PENIOCEREUS GREGGII VAR TRANSMONTANUS	DESERT NIGHT-BLOOMING CEREUS						SR		PLANT
PENSTEMON DISCOLOR	CATALINA BEARDTONGUE			S			HS		PLANT
PENSTEMON SUPERBUS	SUPERB BEARDTONGUE			S			(PLANT
PERITYLE AJOENSIS	AJO ROCK DAISY			ú			S.Y.		PLANT DI ANT
PHYSALIS LATIPHYSA	BROAD-LEAF GROUND-CHERRY			n			ď		PLANI PI ANT
PLATANTHERA LIMOSA SAMOLUS VAGANS	CHIRICAHUA MOUNTAIN BROOKWEED			S			ś		PLANT
SAMOLOS VAGANOS	FALLEN LADIES'-TRESSES						SR		PLANT
SENECIO CARLOMASONII	SEEMANN GROUNDSEL			S					PLANT
SISYRINCHIUM CERNUUM	NODDING BLUE-EYED GRASS			S					PLANT
SOLANUM LUMHOLTZIANUM	LUMHOLTZ NIGHTSHADE			S			Ç		PLANT
STENOCEREUS THURBERI	ORGAN PIPE CACTUS			Ć			ž		PLAN
STEVIA LEMMONII	LEMMON'S STEVIA			n o					PLAN!
TEPHROSIA THURBERI	ADAVAIDA WOOD EEDNI			2	ď				PI ANT
HELYPIEKIS PUBERULA VAR SONORENSIS	SONORAN NOSEBERN			S)				PLANT
I RAGIA LACINIATA TRITEI EIODOIS DAI MERI	BLUE SAND LILY)	S		SR		PLANT
TIMAMADO MACDOLIGALI	TUMAMOC GLOBEBERRY			S	S		SR		PLANT
VAUQUELINIA CALIFORNICA SSP SONORENSIS	A ARIZONA ROSEWOOD				S				PLANT
VIOLA UMBRATICOLA	SHADE VIOLET			S					PLANT
CHARINA TRIVIRGATA GRACIA	DESERT ROSY BOA	သွင		တ	S				REPTILE
CHARINA TRIVIRGATA TRIVIRGATA	MEXICAN ROSY BOA	SC		Ó	က				KEPTILE OTOTI
CHIONACTIS PALAROSTRIS ORGANICA	ORGAN PIPE SHOVELNOSE SNAKE	(တ	•				REPUILE
CNEMIDOPHORUS BURTI STICTOGRAMMUS	GIANT SPOTTED WHIPTAIL	SC		SO (တ ၊				KEPLICE
CNEMIDOPHORUS BURTI XANTHONOTUS	REDBACK WHIPTAIL	သွင်		'n	S	9			KEP IILE
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	သွ		(M			KEP ILE
KINOSTERNON SONORIENSE LONGIFEMORALE	SONOYTA MUD TURTLE	ပ		o o					KEP I E
MASTICOPHIS BILINEATUS LINEOLATUS	AJO MOUNTAIN WHIPSNAKE	('n	(707 - 100 C
PHRYNOSOMA CORNUTUM	TEXAS HORNED LIZARD	SS		Ć	သ				KEP I LE
PHYLLORHYNCHUS BROWNI LUCIDUS	MARICOPA LEAFNOSE SNAKE	(y o					XEV CE
THAMNOPHIS EQUES MEGALOPS	MEXICAN GARTER SNAKE	၁ တိ		n c	c) 			אחר ביים מים חיבורים מים
UMA NOTATA RUFOPUNCTATA	COWLES FRINGE-10ED LIZARD) (n	n	ر *			אביר היי
COUNTYNAME: PINAL									
CACTED BHRYNE OF WACEA	GREAT PLAINS NARROWMOUTH TOAD					MC			AMPHIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	SC		S		WC			AMPHIBIAN
ARDEA ALBA	GREAT EGRET					MC			BIRD
ASTURINA NITIDA MAXIMA	NORTHERN GRAY HAWK	SC		S	S	MC .			BIRD
BUTEOGALLUS ANTHRACINUS	COMMON BLACK-HAWK	C		က		S &		c	BIKD GBD
COCCYZUS AMERICANUS	YELLOW-BILLED COCKOO	ر		o) *		n	מצום

Special Status Species by County for Arizona AGFE	AGFD, HDMS	January 15, 2002	2						Page:22
Scientific Name	Common Name	*C ESA Ha	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: PINAL									
OLIVINAMITITA AMOVOOGGINTO	ADITO SINITSIHIM CELLIBE ADVIO					CW			0
PENDLOCT GIVE ACTOMINATES FAMPLOONAX TRAIL II EXTIMIS	CHER	Ш	>-	v.) } }		0	ONIA Cala
FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON	SC		S		MC		۱ 4	BIRD
GLAUCIDIUM BRASILIANUM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL	Ш	>			WC			BIRD
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LT		S		WC			BIRD
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE					WC			BIRD
IXOBRYCHUS EXILIS HESPERIS	WESTERN LEAST BITTERN	SC				X X			BIRD
RALLUS LONGIROS I RIS YUMANENSIS	YOMA CLAPPER KAIL	П) } ?			BIRD
TYPANNUS CRASSIROS I RIS	TROPICAL KINGRIRD) () M			BIRD
AGOSIA CHRYSOGASTER	LONGEIN DACE	SC			S)			FISH
CATOSTOMUS CLARKI	DESERT SUCKER	sc			S				FISH
CATOSTOMUS INSIGNIS	SONORA SUCKER	SC			S				FISH
CYPRINODON MACULARIUS	DESERT PUPFISH	띄	>-			WC			FISH
GILA ROBUSTA	ROUNDTAIL CHUB	SC		S		WC		2	FISH
MEDA FULGIDA	SPIKEDACE	ב!	>	S		NC.			FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	GILA TOPMINNOW	H &			C	NC MC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	ე -	>	ú	'n	Civi			TST
HARUGA COBITIS	LOACH MINNOW	ا د		o o	٥) *			
CICINDELA OREGONA MARICOFA	MEXICOPA LIGEN BEETLE	၃ ပ တ		o	n u	C/W			MAMMAI
CHOERONYCIENIS IMENICANA FIMODO PEROTIS CALIFORNICIIS	GREATER WESTERN MASTIFF BAT	သို့			כ) }			MAMMAI
LASIURUS BLOSSEVILLII	WESTERN RED BAT					WC			MAMMAL
LASIURUS XANTHINUS	WESTERN YELLOW BAT					MC			MAMMAL
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	Щ ;		S		MC			MAMMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	၁၀			တ (MC			MAMMAL
MYOTIS VELIFER	CAVE MYOTIS	သွ ပ			S				MAMMAL
MYOTIS YUMANENSIS	YOMA MYOTIS	کر			ć				MAMMAL
NYCHNOMOPS FEMOROSACCUS	POCKETED FREE-TAILED BAT	٥			n			•	MAMMAL
PLECOTOS TOWNSENDII PALLESCENS) (ď			ď	+	DI ANT
ABO TIEON FAMISHIN	HOHOKAM AGAVE	သွ		ာတ	S		í S		PLANT
AGAVE TOUMEYANA VAR BELLA	TOUMEY AGAVE				ı		SR		PLANT
CAREX ULTRA	ARIZONA GIANT SEDGE			S	S				PLANT
ECHINOCACTUS HORIZONTHALONIUS VAR	NICHOL TURK'S HEAD CACTUS	Ë					HS		PLANT
ECHOLIN STRIGLOCHIDIATUS VAR	ARIZONA HEDGEHOG CACTUS	Ш		S			HS		PLANT
ECHINOMASTUS ERECTOCENTRUS VAR	ACUNA CACTUS	O					HS		PLANT
ACUNENSIS	OF ITO A DIGORNIA CONTRACTOR	ć		ú			C		1
ECHINOMASTUS ERECTOCENTRUS VAR ERECTOCENTRUS	NEEDLE-SPINED PINEAPPLE CACIOS	ာ့		n			አ አ		FLAN
ERIGERON ANCHANA	MOGOLLON FLEABANE	SC		S			٥		PLANT
ENIOGONOM CAPILLANE EUPHORBIA GRACILLIMA	MEXICAN BROOMSPURGE)		S			Ś		PLANT
_									,

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002						Page:23
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	ΝΡί	NESL	Taxonomic Group
COUNTYNAME: PINAL								
FEROCACTUS CYLINDRACEUS VAR	GOLDEN BARREL CACTUS					SR		PLANT
EASTWOODIAE EBEMONTODENDRON CALIFORNICLIM	HSCANNEL BUSH			S		SR		PLANT
HEDEOMA DENTATUM	MOCK-PENNYROYAL		S					PLANT
LILAEOPSIS SCHAFFNERIANA VAR RECURVA	HUACHUCA WATER UMBEL	≻				HS		PLANT
MABRYA ACERIFOLIA	MAPLELEAF FALSE SNAPDRAGON		ဟ			Q		PLANI
MAMMILLARIA THORNBERI	THORNBER FISHHOOK CACTUS					S. S.		PLANT
MAMMILLARIA VIRIDIFLORA DENSTEMON DISCOLOR	CATALINA BEARDTONGUE		S			F.		PLANT
PERITY F GIL FNSIS VAR GILENSIS	GILA ROCK DAISY		S					PLANT
STENOCEREUS THURBERI	ORGAN PIPE CACTUS					SR		PLANT
THELYPTERIS PUBERULA VAR SONORENSIS	ARAVAIPA WOOD FERN		Ċ	က d		Č		PLANI
TUMAMOCA MACDOUGALII	TUMAMOC GLOBEBERRY	ç	ທ ບ	ກ ບ		۲ 0		REPTILE
CNEMIDOPHORUS BURTI STICTOGRAMMUS	GIANT SPOTTED WHIP I AIL	ာ တိ	n	n	WC			REPTILE
GOPHERUS AGASSIZII (SONOKAN POPULA IION)	SONOKAN DESEKT TOKTOISE)	v.		2			REPTILE
PHYLLORHYNCHUS BROWNI LUCIDUS THAMNOPHIS EQUES MEGALOPS	MARICOFA LEAFINGSE STANE MEXICAN GARTER SNAKE	SC	ာ ဟ		WC			REPTILE
COUNTYNAME: SANTA CRUZ								
AMRYSTOMA TIGRINIIM STERBINSI	SONORAN TIGER SALAMANDER	띄			WC			AMPHIBIAN
FI FITHERODACTYLUS AUGUSTI CACTORUM	WESTERN BARKING FROG		S		× ×			AMPHIBIAN
GASTROPHRYNE OLIVACEA	GREAT PLAINS NARROWMOUTH TOAD				S N			AMPHIBIAN
RANA CHIRICAHUENSIS	CHIRICAHUA LEOPARD FROG	ΡŢ	တ		NC N			AMPHIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	၁၀	က (S W		•	AMPHIBIAN
ACCIPITER GENTILIS	NORTHERN GOSHAWK	သွ	o c		ر *		4	O'Ala Cala
AIMOPHILA QUINQUESTRIATA	FIVE-STRIPED SPARROW		n u		CW			BIRD BIRD
AMAZILIA VIOLICEPS	VIOLE I-CROWNED HUMIMINGBIRD	ی	ס))			BIRD
AMMODRAMUS BAIRDII	BAIRUS SPARROW	3			X :			BIRD
ANTHUS STRAGOEII	NORTHERN GRAY HAWK	SC	S	S	WC			BIRD
ANTORINA MITIDA MAKIMA	WESTERN BLIRROWING OWL	SC		S				BIRD
ATHENE CONTOCKNING THE COSES	COMMON BLACK-HAWK		S		WC			BIRD
COCCYZIS AMERICANIIS	YELLOW-BILLED CUCKOO	ပ	S		WC		က	BIRD
COCCIECO AMENORIA	BI ACK-BELLIED WHISTLING-DUCK				WC			BIRD
CANDIDONAY TRAIL II EXTINIIS	SOUTHWESTERN WILLOW FLYCATCHER	\ ⊢E	တ		WC		2	BIRD
EMITIONINA TITURE EXTENSION FALCO	AMERICAN PEREGRINE FALCON	SC	S		WC		4	BIRD
GLAUCIDIUM BRASILIANUM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL	\ -			MC .			BIRD
PACHYRAMPHUS AGLAIAE	ROSE-THROATED BECARD				MC MC			BIRU
PANDION HALIAETUS	OSPREY				ر کا کا			BIRD
POLIOPTILA NIGRICEPS	BLACK-CAPPED GIVALORER	\ 	S		2 S		ო	BIRD
SIRIX OCCIDENTALIS LOCIDA	MICACON STOLLED CONT. FI FOANT TROGON)		WC			BIRD
TYRANNIS CRASSIROSTRIS	THICK-BILLED KINGBIRD				WC			BIRD

	-)
Scientific Name	Common Name	*Critical ESA Habitat	USFS	ВГМ	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: SANTA CRUZ								
					()			
YKANNUS MELANCHOLICUS	KOPICAL KINGBIRD	Ç		c) }			מאומ
AGOUN CHRYOOGAN I ER		ງເ		0 0				בסב
CATOSTOTION CLARKI	DESERT SUCKER	ာ င		0 (
CATOSTOMUS INSTGNIS	SONORA SUCKER	۲ ۲		o	(141			
GILA DI PAENIA	SONORACHUB		Ó) (}			בסוב
GILA INTERMEDIA	GILA CHUB	ပ !	တ		S N			FISH
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	GILA TOPMINNOW	쁴			MC			FISH
RHINICHTHYS OSCULUS	SPECKLED DACE	SC		S				FISH
AGATHYMUS ARYXNA	ARIZONA GIANT SKIPPER		S					INVERTEBRATE
CAI FPHFI IS RAWSONI ARIZONENSIS	ARIZONA METALMARK		တ					INVERTEBRATE
HETERE! MIS STEPHAN!	STEPHAN'S HETEREI MIS RIFFLE BEETLE	SC	S					INVERTEBRATE
I IMENITIS ARCHIDELIS ORSOLETA	OBSOLETE VICEROY BUTTERELY		တ					INVERTEBRATE
NEODHASIA TERI OOTII	CHIRICAHITA PINE WHITE		· v:					INVERTEBRATE
DADOLI DOSIS TUDNOSONI		ر) (r	U				INVERTERRATE
	MINION MEADOWELY)	υ	ס				INVESTERDATE
SYMPE! RUM SIGNIFERUM	MEXICAN MEADOWFLY	Ó	0	Ó	(ביאטבין אביאוו
CHOERONYCTERIS MEXICANA	MEXICAN LONG-TONGUED BA	SC		S	ე (MAMMAL
LASIURUS BLOSSEVILLII	WESTERN RED BAT				S S			MAMMAL
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	믜	S		WC			MAMMAL
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC		S	WC			MAMMAL
MYOTIS VELIFER	CAVE MYOTIS	SC		S				MAMMAL
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC					4	MAMMAL
SIGMODON OCHROGNATHUS	YELLOW-NOSED COTTON RAT	SC						MAMMAL
SOREX ARIZONAE	ARIZONA SHREW	SC	S		WC			MAMMAL
THOMOMYS UMBRINUS INTERMEDIUS	SOUTHERN POCKET GOPHER		S					MAMMAL
ARITH ON PARISHII	PIMA INDIAN MALLOW	SC	S			SR		PLANT
ACACIA SMAILII	SWEET ACACIA		S					PLANT
ACACIT CIMPLE!!	SANTA CRIIZ STRIPED AGAVE	SC	S	v:		S.E.		PLANT
	BEDELOWER ONION)	o or.)		. W.		PI ANT
ALLICIM ATTICOMATOM	SAIVA	ý	o v.			Y Y		PI ANT
AMOREDAIA GOIVEALEZII) (υ			2		PI ANT
AMSONIA GRAINDIFLORA		2) (ENV G
ASCLEPIAS LEMMONII		Ç) (FINA
ASCLEPIAS UNCIALIS	GKEENE MILKWEED	<u>ر</u> (و	၈ ဖ	((
ASTRAGALUS HYPOXYLUS		SC	S	ഗ		SK		L'AN I
BROWALLIA ELUDENS	ELUSIVE NEW BROWALLIA SPECIES	SC	S					PLANT
CAPSICUM ANNUUM VAR GLABRIUSCULUM	CHILTEPIN		တ					PLANT
CAREX CHIHUAHUENSIS	A SEDGE		S					PLANT
CAREX ULTRA	ARIZONA GIANT SEDGE		S	S				PLANT
CHOISYA MOLLIS	SANTA CRUZ STAR LEAF	SC	S					PLANT
CONIOSELINUM MEXICANUM	MEXICAN HEMLOCK PARSLEY	SC	S					PLANT
CORYPHANTHA RECURVATA	SANTA CRUZ BEEHIVE CACTUS		S	S		HS		PLANT
CORYPHANTHA SCHEERI VAR ROBUSTISPINA	PIMA PINEAPPLE CACTUS	끸				HS		PLANT
COURSETIA GLABELLA		SC	S					PLANT
DALEA TENTACULOIDES	GENTRY INDIGO BUSH	SC	တ	S		HS		PLANT
ERIGERON ARISOLIUS			S					PLANT
								•

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January 15, 2002

Special Status Species by County for Arizona AGFD, HDMS

Scientific Name		•						- agc. 23
	Common Name	*Critical ESA Habitat	II USFS	ВСМ	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: SANTA CRUZ								
		ć				C		į
EUTIONEM MACKOTOS	WOUDLAND SPORGE	သ ရ	((۲ ر ر		LAN.
GRAFIOTE ALOM BAR! KAMI!	BAK I KAM S I ONECKOP	S	y)	S		S.Y		PLANT
HEDEOMA DENTATUM	MOCK-PENNYROYAL		တ					PLANT
HETEROTHECA RUTTERI	HUACHUCA GOLDEN ASTER	SC	S	တ				PLANT
HEXALECTRIS REVOLUTA	CHISOS CORAL-ROOT		V.	V.				PI ANT
))		٥		
		C	ć			20		
	PRINGLE DAWKWEED	၁၈	o (L'AN
IPOMOEA FLUMMERAE VAR CUNEIFOLIA	HUACHUCA MOKNING GLOKY		S					PLANT
IPOMOEA THURBERI	THURBER'S MORNING-GLORY		S					PLANT
LAENNECIA ERIOPHYLLA	WOOLLY FLEABANE		S					PLANT
LILAEOPSIS SCHAFFNERIANA VAR RECURVA	HUACHUCA WATER UMBEL	\ \				HS.		PLANT
IIIIM PARRYI	Y II NOMME	SC	v.			S.		PI ANT
OBELIA FEMENTALIS	I EAEV I OBELIA))			: a		
						5 6		
LOBELIA LAXIFLORA	MEXICAN LOBELIA		(አ		LAN.
LOTUS ALAMOSANUS			S					PLANT
LUPINUS HUACHUCANUS	HUACHUCA MOUNTAIN LUPINE		S					PLANT
MACROPTILIUM SUPINUM	SUPINE BEAN	SC	S			SR		PLANT
MALAXIS CORYMBOSA	MADREAN ADDERS MOUTH					SR		PLANT
MALAXIS PORPHYREA	PURPLE ADDER'S MOUTH					SR		PLANT
MAMMILLARIA WRIGHTII VAR WILCOXII	WILCOX FISHHOOK CACTUS					SR		PLANT
MANIHOT DAVISIAE	ARIZONA MANIHOT		S					PLANT
MARINA DIFFUSA	ESCOBA		S					PLANT
METASTEI MA MEXICANIM	HNIV CHEMA IIM SNIEDIM	SC	o cr					PI ANT
MILLION ENDED GIV VEDOBELLIA	WEEDING MILLI V)	v					TIVO O
		(י					
NO I HOLAENA LEMMONII	LEMMON CLOAK FERN	200	(LAN I
PASPALUM VIRLE III	VIKLE I PASPALUM		S					FLAN
PASSIFLORA FOETIDA	FOETID PASSIONFLOWER		တ					PLANT
PECTIS IMBERBIS	BEARDLESS CHINCH WEED	SC	S					PLANT
PENSTEMON DISCOLOR	CATALINA BEARDTONGUE		S			HS		PLANT
PENISTEMON STIPERBLIS	SUPERB REARDTONGUE		v.					PI ANT
) U					Live in
FHYSALIS LA ITH YSA	האסקיטיסואס האסאים		o					1 ! ! !
PSILOTUM NUDUM	WHISK FIERN					HS		PLANT
SAMOLUS VAGANS	CHIRICAHUA MOUNTAIN BROOKWEED		တ					PLANT
SCHIEDEELLA PARASITICA	FALLEN LADIES'-TRESSES					SR		PLANT
SENECIO CARI OMASONII	SEEMANN GROUNDSEL		v.					PI ANT
			ν (0		
	MODING SINGLES) C			2		<u> </u>
SISTRINCTION CERNOON	NOUDING BLUE-ETED GRASS		ימ					FLAN
SOLANUM LUMHOL I ZIANUM	LOMMOL IZ NIGH I SHADE	!	'n					LAN-
SPIRANTHES DELITESCENS	MAUKEAN LADIES'-I KESSES	Ä				ΣΞ		PLANT
STEVIA LEMMONII	LEMMON'S STEVIA		S					PLANT
TALINUM HUMILE	PINOS ALTOS FLAME FLOWER	SC	S			SR		PLANT
TALINUM MARGINATUM	TEPIC FLAME FLOWER	SC	S			SB		PLANT
TEPHROSIA THIIRBERI	THURBER HOARY PEA		· c			<i>.</i>		PI ANIT
TE 75 (OC) 110 (OE) 4	SONODANINOSEBIBNI) (

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002					Page: 26
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPL NESL	Taxonomic C Group
COUNTYNAME: SANTA CRUZ							
CNEMIDOPHORUS BURTI STICTOGRAMMUS CROTALUS WILLARDI WILLARDI GOPHERUS AGASSIZII (SONORAN POPULATION)	GIANT SPOTTED WHIPTAIL ARIZONA RIDGENOSE RATTLESNAKE SONORAN DESERT TORTOISE	os os	တ တ	ω	M W		REPTILE REPTILE REPTILE
OXYBELIS AENEUS THAMNOPHIS EQUES MEGALOPS	MEXICAN VINE SNAKE MEXICAN GARTER SNAKE	SC	S		WC W W		REPTILE REPTILE
COUNTYNAME: YAVAPAI							
BUFO MICROSCAPHUS MICROSCAPHUS RANA CHIRICAH IFNSIS	ARIZONA TOAD CHIRICAHIIA I EOPARD FROG	SC	S		Ç		AMPHIBIAN
RANA PIPIENS	NORTHERN LEOPARD FROG		ာ ဟ		ე () 	^	AMPHIBIAN
RANA YAVAPAIENSIS	LOWLAND LEOPARD FROG	SC	တ		WC	ı	AMPHIBIAN
ACCIPILER GENTILIS BITTED REGALIS	NOK! HEKN GOSHAWK FERRI GINO! IS HAWK	သ လ	ဟ		o v	4 (BIRD
BUTEOGALLUS ANTHRACINUS	COMMON BLACK-HAWK	}	တ) 	J.	BIRD
CERYLE ALCYON	BELTED KINGFISHER	(Ć		MC .	4	BIRD
COCC 1203 AMERICANOS FMPIDONAX TRAII II EXTIMIIS	YELLOW-BILLED COCKOO SOLITHWESTERN WILLOW ELYCATCHER	+ <u>-</u> د	ys v		S W	с	BIRD
FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON		ာဟ) 	7 4	BIRD
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LT	S		WC	=	BIRD
SEIOPHAGA RUTICILLA STRIX OCCIDENTALIS LICIDA	AMERICAN REDSTART MEXICAN SPOTTED OW	> -	o		S &C	C	BIRD
AGOSIA CHRYSOGASTER	LONGFIN DACE		n	v.	S	m	BIRD
CATOSTOMUS CLARKI	DESERT SUCKER	SC		ာတ			I I
CATOSTOMUS INSIGNIS	SONORA SUCKER			S			FISH
CYPRINODON MACULARIUS	DESERT POPFISH	≻ ∃ (ć		S &		FISH
GILA IN EKWEDIA GILA ROBUSTA	GILA CHUB ROUNDTAIL CHUB	သင္တ	n v) () 	c	FISH
MEDA FULGIDA	SPIKEDACE	۲ ×	တ		X X	7	E E
POECILIOPSIS OCCIDENTALIS OCCIDENTALIS	GILA TOPMINNOW				WC		FISH
PTYCHOCHEILUS LUCIUS BHIMICHTHYS OSCIII IIS	COLORADO PIKEMINNOW	LEXN Y		C	MC	2	FISH
XYRAUCHEN TEXANUS	RAZORBACK SUCKER	F 2	v:	n	CW	c	FISH
CICINDELA OREGONA MARICOPA	MARICOPA TIGER BEETLE		တ	S) -	7	FISH
CYLLOEPUS PARKERI	PARKER'S CYLLOEPUS RIFFLE BEETLE	SC	S				INVERTEBRATE
METRICHIA VOLADA PYRGIII OPSIS GI ANDI II OSA	PAGE SPRING MICRO CADDISFLY VERDE RIM SPRINGSNAII	သ လ	U	٥			INVERTEBRATE
PYRGULOPSIS MONTEZUMENSIS	MONTEZUMA WELL SPRINGSNAIL	လ လ	ာတ	၈ ဟ			INVERTEBRATE
PYRGULOPSIS MORRISONI	PAGE SPRINGSNAIL	0	S	S			INVERTEBRATE
PYRGULOPSIS SOLA	BROWN SPRINGSNAIL	သင္သ	တ	တ			INVERTEBRATE
EDERMA MACOLATOM IDIONYCTERIS PHYLLOTIS	SPOLLED BA! ALLEN'S BIG-EARED BAT	သင္လ		တ တ	S M		MAMMAL
LASIURUS BLOSSEVILLII		(,	WC		MAMMAL
ומאטאט כארוין טאטאט	CALITORNIA LEAT-NOVED BAL))		တ	MC		MAMMAL

Special Status Species by County for Arizona AGFD	AGFD, HDMS	January 15, 2002						Page:27
Scientific Name	Common Name	*Critical ESA Habitat	USFS	BLM	WSCA	NPi	NESL	Taxonomic Group
COUNTYNAME: YAVAPAI								
MICROTILS MEXICANILS HILL BAIENSI	HION NECEXAMINATE	щ			C/W			,
MYOTIS HOLE IN OCCUPATION		;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;		ú) \$			MAMMAL
MYOTIS THYSANODES	ERINGED MYOTIS) (n u				MAMMAL
MYOTIS VEI JEEP	CAVE MOOTIS) (n c				MAMMAL
MIOTIS VELIFER	CAVE MITOLIS	<u>ي</u> د د		n o				MAMMAL
	DIG FREE-IAILED BAI	ာ့		SO.				MAMMAL
FLECOTOS TOWNSENDII PALLESCENS	PALE LOWNSEND'S BIG-EAKED BAI	ာင်	,				4	MAMMAL
ABUTILON PARISHII	PIMA INDIAN MALLOW	သင္	S			SR		PLANT
AGAVE ARIZONICA	ARIZONA AGAVE	Ш	တ			Y.		PLANT
AGAVE DELAMATERI	TONTO BASIN AGAVE	SC	S			Ϋ́		PLANT
AGAVE MCKELVEYANA	MCKELVEY'S AGAVE					SR		PLANT
AGAVE MURPHEYI	HOHOKAM AGAVE	SC	S	S		SH		PLANT
AGAVE TOUMEYANA VAR BELLA	TOUMEY AGAVE					SR		PLANT
ALLIUM BIGELOVII	BIGELOW ONION					SR		PLANT
ASTRAGALUS NEWBERRYI VAR AQUARII				S				PLANT
CAREX ULTRA	ARIZONA GIANT SEDGE		S	S				PLANT
ERIGERON SAXATILIS	ROCK FLEABANE		S					PLANT
ERIOGONUM APACHENSE	APACHE WILD-BUCKWHEAT	SC				SR		PLANT
ERIOGONUM ERICIFOLIUM VAR ERICIFOLIUM	HEATHLEAF WILD-BUCKWHEAT		S					Pi ANT
ERIOGONUM RIPLEYI	RIPLEY WILD-BUCKWHEAT	SC	S			SR		PI ANT
FREMONTODENDRON CALIFORNICUM	FLANNEL BUSH			S		SR		Pi ANT
HEDEOMA DIFFUSUM	FLAGSTAFF PENNYROYAL		S			SR		Pi ANT
HEUCHERA EASTWOODIAE	EASTWOOD ALUM ROOT		S					PLANT
LUPINUS LATIFOLIUS SSP LEUCANTHUS	BROADLEAF LUPINE		S					PI ANT
MAMMILLARIA VIRIDIFLORA	VARIED FISHHOOK CACTUS					SR		PI ANT
PENSTEMON NUDIFLORUS	FLAGSTAFF BEARDTONGUE		S					PI ANT
PHLOX AMABILIS	ARIZONA PHLOX		S					PI ANT
POLYGALA RUSBYI	HUALAPAI MILKWORT		S					PI ANT
PUCCINELLIA PARISHII	PARISH ALKALI GRASS	SC				НS	4	PI ANT
PURSHIA SUBINTEGRA	ARIZONA CLIFF ROSE	E				HS		PI ANT
SALVIA DORRII SSP MEARNSII	VERDE VALLEY SAGE	SC	S			SR		PI ANT
TALINUM VALIDULUM	TUSAYAN FLAME FLOWER	SC				SR		PI ANT
THELYPTERIS PUBERULA VAR SONORENSIS	ARAVAIPA WOOD FERN			S				PI ANT
WASHINGTONIA FILIFERA	CALIFORNIA FAN PALM					SR		FNA IQ
CHARINA TRIVIRGATA GRACIA	DESERT ROSY BOA	SC	S	S				REDTH F
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	SC			WC			DEDTILE
THAMNOPHIS EQUES MEGALOPS	MEXICAN GARTER SNAKE	SC	S		W.			
THAMNOPHIS RUFIPUNCTATUS	NARROW-HEADED GARTER SNAKE	SC	တ		S N			DEDTILE
UMA SCOPARIA	MOJAVE FRINGE-TOED LIZARD				X			
XANTUSIA VIGILIS ARIZONAE	ARIZONA NIGHT LIZARD		S					REPTILE
COUNTYNAME: YUMA								
ARDEA ALBA	GREAT EGRET				Š			<u>.</u>
COCCYZUS AMERICANUS	YELLOW-BILLED CUCKOO	O	S		N N		က	BIRD

Special Status Species by County for Arizona AGFD,	AGFD, HDMS	January 15, 2002	002						Page:28
Scientific Name	Common Name	ESA	*Critical Habitat	USFS	BLM	WSCA	NPL	NESL	Taxonomic Group
COUNTYNAME: YUMA									
EGRETTA THULA	SNOWY EGRET					S ≪			BIRD
EMPIDONAX TRAILLII EXTIMUS	SOUTHWESTERN WILLOW FLYCATCHER	<u>"</u>	> :	S		MC		2	BIRD
GLAUCIDIUM BRASILIANUM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL	Щ	>			NC MC			BIRD
LATERALLUS JAMAICENSIS COTURNICULUS	CALIFORNIA BLACK RAIL	SC		S		WC			BIRD
RALLUS LONGIROSTRIS YUMANENSIS	YUMA CLAPPER RAIL	凹				WC			BIRD
XYRAUCHEN TEXANUS	RAZORBACK SUCKER	Щ	>-	တ		WC		2	FISH
ANTILOCAPRA AMERICANA SONORIENSIS	SONORAN PRONGHORN	Щ		S		WC			MAMMAI
EUDERMA MACULATUM	SPOTTED BAT	SC			S	WC			MAMMAI
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	SC							MAMMAI
LASIURUS XANTHINUS	WESTERN YELLOW BAT					WC WC			MAMMAI
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC			S	WC			MAMMAI
MYOTIS YUMANENSIS	YUMA MYOTIS	SC							MAMMAI
NYCTINOMOPS FEMOROSACCUS	POCKETED FREE-TAILED BAT				S				MAMMAI
PLECOTUS TOWNSENDII PALLESCENS	PALE TOWNSEND'S BIG-EARED BAT	SC						4	MAMMAI
SIGMODON HISPIDUS EREMICUS	YUMA HISPID COTTON RAT	SC							MAMMAI
ALLIUM PARISHII	PARISH ONION						SR		PLANT
ASTRAGALUS MAGDALENAE VAR PEIRSONII	PEIRSON'S MILKVETCH	L	z						PLANT
BERBERIS HARRISONIANA	KOFA BARBERRY				S				PLANT
CRYPTANTHA GANDERI	GANDER'S CRYPTANTHA	SC							PLANT
EUPHORBIA PLATYSPERMA	DUNE SPURGE	၁၄							PLANT
HELIANTHUS NIVEUS SSP TEPHRODES	DUNE SUNFLOWER	SC							PLANT
LOPHOCEREUS SCHOTTII	SENITA						SR		PLANT
OPUNTIA ECHINOCARPA	STRAW-TOP CHOLLA						SR		PLANT
PHOLISMA SONORAE	SAND FOOD	သင			S		£		PLANT
RHUS KEARNEYI	KEARNEY SUMAC						SR		PLANT
STEPHANOMERIA SCHOTTII	SCHOTT WIRE LETTUCE				S				PLANT
TRITELEIOPSIS PALMERI	BLUE SAND LILY				S		SR		PLANT
WASHINGTONIA FILIFERA	CALIFORNIA FAN PALM						SR		PLANT
CHARINA TRIVIRGATA GRACIA	DESERT ROSY BOA	SC		S	S				REPTILE
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	SC				WC			REPTILE
PHRYNOSOMA MCALLII	FLAT-TAIL HORNED LIZARD	SC				WC			REPTILE
UMA NOTATA RUFOPUNCTATA	COWLES FRINGE-TOED LIZARD	SC		S	S	MC			REPTILE

*If "Y" or "P" is indicated, Critical Habitat has been designated or proposed for the species. Critical Habitat is not necessarily designated or proposed within Arizona or within each county where the species occurs therein. Please contact the local USFWS office for details about Critical Habitats and their locations.

STATUS DEFINITIONS

ARIZONA GAME AND FISH DEPARTMENT (AGFD) HERITAGE DATA MANAGEMENT SYSTEM (HDMS)

FEDERAL US STATUS

ESA Endangered Species Act (1973 as amended)

US Department of Interior, Fish and Wildlife Service (http://arizonaes.fws.gov)

Listed

- LE Listed Endangered: imminent jeopardy of extinction.
- LT Listed Threatened: imminent jeopardy of becoming Endangered.
- XN Experimental Nonessential population.

Proposed for Listing

- PE Proposed Endangered.
- PT Proposed Threatened.

Candidate (Notice of Review: 1999)

- C Candidate. Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.
- SC Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).

Critical Habitat (check with state or regional USFWS office for location details)

- Y Yes: Critical Habitat has been designated.
- P Proposed: Critical Habitat has been proposed.

[\N] No Status: certain populations of this taxon do not have designated status (check with state or regional USFWS office for details about which populations have designated status)].

USFS US Forest Service (1999 Animals, 1999 Plants: corrected 2000)

US Department of Agriculture, Forest Service, Region 3 (http://www.fs.fed.us/r3/)

Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

BLM US Bureau of Land Management (2000 Animals, 2000 Plants)

US Department of Interior, Bureau of Land Management, Arizona State Office (http://azwww.az.blm.gov)

- Sensitive: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.
- Population: only those populations of Banded Gila monster (*Heloderma suspectum cinctum*) that occur north and west of the Colorado River, are considered sensitive by the Arizona State Office.

TRIBAL STATUS

NESL Navajo Endangered Species List (2000)

Navajo Nation, Navajo Fish and Wildlife Department (http://www.heritage.tnc.org/nhp/us/navajo/esl.html)

The Navajo Endangered Species List contains taxa with status from the entire Navajo Nation which includes parts of Arizona, Utah, and New Mexico. In this notebook we provide NESL status for only those taxa whose distribution includes part or all of the Arizona portion of the Navajo Nation.

Groups

- Those species or subspecies that no longer occur on the Navajo Nation. 1
- Any species or subspecies which is in danger of being eliminated from all or a significant 2 portion of its range on the Navajo Nation.
- Any species or subspecies which is likely to become an endangered species, within the 3 foreseeable future, throughout all or a significant portion of its range on the Navajo Nation.
- Any species or subspecies for which the Navajo Fish and Wildlife Department (NF&WD) does 4 not currently have sufficient information to support their being listed in Group 2 or Group 3 but has reason to consider them. The NF&WD will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

MEXICAN STATUS

MEX Mexican Federal Endangered Species List (October 16, 2000)

Proyecto de Norma Oficial Mexicana PROY-NOM-059-ECOL-2000

The Mexican Federal Endangered Species List contains taxa with status from the entire Mexican Republic and waters under its jurisdiction. In this notebook we provide MEX designations for only those taxa occurring in Arizona and also in Mexico.

- En Peligro de Extinción(Determined Endangered in Mexico): in danger of extinction. P
- Amenazada (Determined Threatened in Mexico): could become endangered if factors causing A habitat deterioration or population decline continue.
- Sujeta a Protección Especial (Determined Subject to Special Protection in Mexico): utilization Pr limited due to reduced populations, restricted distribution, or to favor recovery and conservation of the taxon or associated taxa.
- Probablemente extinta en el medio silvestre (Probably extinct in the wild of Mexico): A native \mathbf{E} species whose individuals in the wild have disappeared, based on pertinent documentation and studies that prove it. The only existing individuals of the species are in captivity or outside the Mexican territory.
- One or more subspecies of this species has status in Mexico, but the HDMS does not track it at the subspecies level (most of these subspecies are endemic to Mexico). Please consult the NORMA Oficial Mexicana PROY-NOM-059-ECOL-2000 for details.]

STATE STATUS

NPL Arizona Native Plant Law (1999)

Arizona Department of Agriculture (http://agriculture.state.az.us/PSD/nativeplants.htm)

HS Highly Safeguarded: no collection allowed.

SR Salvage Restricted: collection only with permit.

ER Export Restricted: transport out of State prohibited.

SA Salvage Assessed: permits required to remove live trees.

HR Harvest Restricted: permits required to remove plant by-products.

WSCA Wildlife of Special Concern in Arizona (1996 in prep)

Arizona Game and Fish Department (http://www.azgfd.com)

WC Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WC are currently the same as those in Threatened Native Wildlife in Arizona (1988).

Revised 10/3/01, AGFD HDMS
J:\HDM\$\DOCUMENT\NBOOK\$\TEMPLATE\EORDEF\$\\$TATDEF



DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF:

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Malcolm Bowekaty, Governor Zuni Pueblo Tribal Council P.O. Box 339 Zuni, NM 87327

Dear Governor Bowekaty:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

Copy Furnished w/o enclosure:

Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300

9-19-98;11:36PM; ;8178566499 # 1



DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

ATTENTION OF:

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Dallas Massey, Sr., Chairman White Mountain Apache Tribal Council P.O. Box 700 Whiteriver, AZ 85941

Dear Chairman Massey:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

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Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300

9-19-98:11:36PM:

;8178866499 # 10



FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300



March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Edward Manuel, Chairman Tohono O'odham Nation P.O. Box 837 Sells, AZ 85634

Dear Chairman Manuel:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

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Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300

DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Raymond Stanley, Jr., Chairman San Carlos Tribal Council P.O. Box 0 San Carlos, AZ 85550

Dear Chairman Stanley:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

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Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



DEPARTMENT OF THE ARMY

FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF:

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Benito F. Valencia, Chairman Pascua Yaqui Tribe 7474 S. Camino de Oeste Tucson, AZ 85746

Dear Chairman Valencia:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

Copy Furnished w/o enclosure:

Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF:

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Wayne Taylor, Jr., Chairman Hopi Tribal Council P.O. Box 123 Kykotsmovi, AZ 86039

Dear Chairman Taylor:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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The INS intends to prepare an Environmental Assessment (EA) addressing the installation, operation and maintenance of these 27 remote video surveillance systems.

If you require additional information or have any questions, please contact Ms. Patience Patterson at (817) 886-1723. Thank you for your assistance with this project.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

Copy Furnished w/o enclosure:

Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable Donald R. Antone, Governor Gila River Indian Community Council P.O. Box 97 Sacaton, AZ 85247

Dear Governor Antone:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

Copy Furnished w/o enclosure:

Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Honorable. Delia Carlyle, Chairperson Ak Chin Community Council 42507 W. Peters and Nall Road Maricopa, AZ 85239

Dear Chairperson Carlyle:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. In our continuing efforts on behalf of the INS and USBP to consult with those Native American groups who may have an interest in the proposed project area; we wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Paul In Hatton

Enclosures

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Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF

March 28, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Installation and Operation and Maintenance of 27 Remote video Surveillance Systems (RVS) in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Mr. James Garrison, State Historic Preservation Officer ATTN: Joanne Miller Arizona State Parks 1300 West Washington Phoenix, Arizona 85007

Dear Mr. Garrison:

The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in Santa Cruz and Cochise Counties, Arizona. We wish to initiate the coordination process for this project as noted in 36 CFR Part 800.3. This proposed project is the placement and operation of 27 RVS systems. Enclosed are maps with locations of all of the proposed RVS sites. Three of the proposed RVS systems will require steel, three-legged towers 80-120 feet tall (SiteN-6, Figure 4; Site E-3, Figure 7; and Uniform, Figure 9) and the remainder will either be mounted on existing structures or be mounted on a 40-80 foot steel monopole. This proposed action includes the installation of overhead or underground power lines at some of the locations, the construction of two new access roads (Site N-1, Figure 1 and Site E-3, Figure 7), and the upgrade of two existing access roads (Site D-1, Figure 1 and Site N-4, Figure 3).

Archaeological surveys are being conducted this next week. You will be provided with the results of those surveys and further coordination on the proposed project at that time. We are consulting with the appropriate Native American groups regarding this project as well. Enclosed is a list of those tribes being contacted.

The INS intends to prepare an Environmental Assessment (EA) addressing the installation, operation and maintenance of these 27 remote video surveillance systems. This document will be tiered from the 1994 Programmatic Environmental Impact Statement that addressed INS and Joint Task Force-Six (JTF-6) activities along the U.S.-Mexico Border.

This document will be tiered from the 1994 Programmatic Environmental Impact Statement that addressed INS and Joint Task Force-Six (JTF-6) activities along the U.S.-Mexico Border. You will also receive a copy of that document for your review and comment.

If you require additional information or have any questions, please contact Ms. Patience Patterson at (817) 886-1723. Thank you for your assistance with this project.

Sincerely,

William Fickel, Jr. Chief, Planning, Environmental and Regulatory Division

Paul In Halthon

Enclosures

Copy Furnished w/o enclosure:

Mr. Eric Verwers INS Architect/Engineer Resource 819 Taylor St. Room 3A28 Fort Worth, TX 76102-0300



"Managing and conserving natural, cultural, and recreational resources" In reply refer to SHPO-2002-628 General Comments

May 1, 2002

William Fickel, Jr.

Chief, Planning, Environmental and Regulatory Division

U.S. Army Corps of Engineers

P. O. Box 17300 Jane Dee Hull

> Fort Worth, TX 76102-0300 Governor

State Parks **Board Members**

Attention:

Patience Patterson

Chair

Suzanne Pfister **Phoenix** RE:

Installation and Operation and Maintenance of 27 Remote Video Surveillance

Systems in the Tucson Sector, Santa Cruz and Cochise Counties, Arizona

Thank you for initiating consultation with our office on behalf of the Immigration and Naturalization Service (INS) and the U.S. Border Patrol (USBP) on the above referenced

federal undertaking and for providing descriptive information about the proposed project.

We understand that reports of supporting cultural resources surveys will be provided along

INS. USBP

SHPO-2002-628 (10444)

with other project related documentation.

Vice-Chair seph H. Holmwood

Dear Mr. Fickel:

John U. Hays

Yarnell

Elizabeth Stewart

Tempe

Vern Rodebush

Safford

We look forward to continuing consultation on this federal undertaking. If you have any questions or concerns, please contact me at (602) 542-7142.

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Sincerely,

Nalter D. Armer, Jr. Benson

Michael E. Anable State Land Commissioner

Kenneth E. Travous **Executive Director**

Arizona State Parks 1300 W. Washington Phoenix, AZ 85007

1 & TTY: 602.542.4174 www.pr.state.az.us

800.285.3703 from 520 & 928) area codes

> General Fax: 602.542.4180

Director's Office Fax: 602.542.4188 Jo Anne Medlev Miller

Compliance Specialist/Archaeologist

and the segment of the property of the propert

State Historic Preservation Office

STAR PUBLISHING COMPANY

Tucson, Arizona

STATE OF ARIZONA) COUNTY OF PIMA)

Janice Anderson, being first duly sworn deposes and she is the Legal Advertising that Representative of the STAR PUBLISHING COMPANY, a corporation organized and existing under the laws of the State of Arizona, and that the said STAR PUBLISHING COMPANY prints and publishes The Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached

Legal Notice

was printed and published correctly in the entire issue of the said The Arizona Daily Star on each of the following dates, to-wit:

September 30, 2002

Janua Anderson

Subscribed and sworn to before me this 2nd day of October, 2002

Notary Public OFFICIAL SEAL CARLA D. GAMEZ NOTARY PUBLIC - ARIZONA PIMA COUNTY My Comm. Expires 08/30/04

My commission expires

TNI AD NO. 9/4883

ALEGAL NOTICE

MOTION OF ASSESSED TY

Breat Comments of Proceedings of the Installation and Operation of the Installation and Operation of the Breater United Burnellands

Systems in the Tuceson Section.

Occiding General, Artesia

The public is hereby notified of the availability of the Installation and operation of nine Remote Video Surveillance (FKS) sites along the U.S.-Mexico Surveillance (FKS) sites County, Artzona. The EA addresses related permanents, and the installation of powerlines from sequents, temporary road improvements, and the installation of powerlines from sequents from the Couples Library, 550 E. 10th Street, Dougles, Artzona 85075, 1847 Vistes Public Library, 2000 E. Roome, Sierra Viste, Artzona 85055, and the Tuceson-Pima Public Library, 101 N. Stone, Rucson, Artzona 85071, Send written comments to Mr. Charles McGragor, U.S. Army Corps of Engineers, Environmental Resources Braich, P.O. Sox. 17300, Fort Worth, Taxon 78102 or call for Machanella Securities and Geobles 30, 28000.

STATE OF ARIZONA) :ss.
COUNTY OF COCHISE)

PUBLIC NOTICE

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Institution of powerful state

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AFFIDAVIT OF PUBLICATION

KIMBERLY L MARINUS

being first

duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the SIERRA VISTA HERALD and the BISBEE DAILY REVIEW newspapers printed and published six days a week in the County of Cochise, State of Arizona, and of general circulation in the cities of Sierra Vista and Bisbee, County of Cochise, State of Arizona and elsewhere, and the hereto attached

NOTICE OF AVAILABIL-ITY ENVIRONMENTAL ASSESSMENT

was printed and published correctly in the regular and entire issue of said SIERRA

VISTA HERALD and BISBEE DAILY REVIEW for

issues, that the first

30th

SEPTEMBER

02

was made on the

day of

20 **30th**

...

and the last publication thereof was made on the

day of

SEPTEMBER

20 OE

that said publication

was made on each of the following dates, to wit:

09/30/02

Request of

LEGAL (PRIVATE PARTY)

Sierra Vista Herald Bisbee Daily Review

Subscribed sworn to before me this

30th

day of

SEPTEMBER

20 02



Notary Public in and for the County of Cochise, State of Arizona

My Commission Expires:

5/21/2004

The Daily Dispatch

530 11th Street, Douglas, AZ 85607 • (520) 364-3424

Marissa Rivera, being first duly sworn deposes and says that she is an agent of The Daily Dispatch, a daily newspaper, published in the City of Douglas, County of Cochise, State of Arizona:

That the Notice, a copy of which is hereto attached, described as follows:

Gulf	South	Re	searchi	Corp
Enviro				

was published daily in the entire and regular issue of said THE DAILY DISPATCH, for ______ consecutive weeks, the FIRST publication of said notice being _____ in the issue dated ______, and the LAST publication being in the issue dated ______.

The dependent further save that the Notice we

The deponent further says that the Notice was published in the newspaper proper, and not in a supplement thereof.

(SIGNED) Marissa Rivera

Sworn and Subscribed to me this

Movarbal, 2007

OFFICIAL SEAL
LAWRENCE L. BLASKE
LAWRENCE L. ARIZON
NOTARY PUBLIC - ARIZON
COCHISE June 2.7

My commission expires: June 2, 2003

PUBLIC NOTICE

NOTICE OF AVAILABILITY ENVIRONMENTAL ASSESSMENT For the Installation and Operation of Nine Remote video Surveillance Systems in the Tucson Sector, Cochise County,

Arizona The public is hereby notified of the availability of the Draft Environmental Assessment (EA) for the installation and operation of nine Remote Video Surveillance (RVS) sites along the U.S.-Mexico Border in Cochise County, Arizona. This EA addresses related permanent road improvements, temporary road improvements, and the installation of powerlines from adjacent power grids. The Draft EA will be available for review at the Douglas Library, 560 E. 10th 'Street, Douglas, Arizona 85607; Sierra Vista Public Library, 2600 E. Tacoma, Sierra Vista, Arizona 85635; and the Tucson-Pima Public Library, 101 N. Stone, Tucson, Arizona 85701. Send written comments to Mr. Charles McGregor, U.S. Army Corps of Engineers, Environmental Resources Branch, P.O. Box 17300, Fort Worth, Texas 76102 or call Mr. McGregor at (817) 886-1708. Written comments will be received until October 30, 2002

Published: 10/01/02.

11-22-02;10:39AM;

SHP.O.- 2002 - 678 (12806)



October 1, 2002

Planning, Environmental and Regulatory Division

OCT 02 2002 10)2/02 PRZONA STATE PARKS/SHP.0

SUBJECT: Immigration Naturalization Service (INS) /U.S. Border Patrol (USBP), Tucson Sector, Proposed Installation, Operation and Maintenance of Nine Remote Video Surveillance Systems (RVS) in the Tucson Sector, Douglas and Naco Stations, Arizona SHPO-2002-628 (10444)

Mr. James Garrison, State Historic Preservation Officer ATTN: Joanne Medley Arizona State Parks 1300 West Washington Phoenix, Arizona 85007

Dear Mr. Garrison:

On March 28, 2002, we wrote to you regarding the installation and operation and maintenance of 27 RVS systems in the Tucson Sector. The enclosed Draft EA covers the Naco and Douglas Stations portion of the area. Changes have been made to the Nogales Station Area of Operation and that is being covered under a separate environmental document. The U.S. Army Corps of Engineers, Fort Worth District (COE), is acting on behalf of INS in regard to the proposed project mentioned above in the Naco and Douglas Areas of Operation.

We initiated the coordination process for this project in our letter of March 28th. We also noted at the time that archaeological surveys were being conducted. At the time all three of the areas (Naco, Douglas and Nogales) were being considered under the same survey work. Now, the project has been separated, but the archaeological work has not. Additional areas of survey are being undertaken in Nogales, thus the survey results we talked about previously will be forthcoming once the additional Nogales portions have been completed. You will be provided with the results of those surveys and further coordination on the proposed project at that time.

No portion of the proposed project work will be initiated until all the Section 106 compliance procedures have been completed. We are consulting with the appropriate Native American groups regarding this project as well.

The INS has prepared an Environmental Assessment (EA) addressing the installation, operation and maintenance of the nine remote video surveillance systems covered within the

Naco/Douglas areas of operation. This document, and the one for Nogales, will be tiered from the 1994 Programmatic Environmental Impact Statement that addressed INS and Joint Task Force-Six (JTF-6) activities along the U.S.-Mexico Border.

If you require additional information or have any questions, please contact Ms. Patience Patterson at (817) 886-1723. Thank you for your assistance with this project.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental and Regulatory Division

Enclosure

Copy Furnished w/o enclosure:

Mr. Charles Parsons Regional Environmental Officer INS Western Region Laguna Niguel, California 92677

Mr. Gilbert Estrada U.S. Border Patrol Tucson Sector Headquarters, 1970 West Ajo Way Tucson, Arizona 85713

Thank your of a look forward to consult on this federal understaking

The draft EA. Suplicate
The draft EA. Suplicate
Please send only one copy of
environmental bocuments.

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Border Action Network

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October 28, 2002

Mr. Charles McGregor
U.S. Army Corps of Engineers, Fort Worth District
Environmental Resources Branch
819 Taylor Street, Room 3A14
Fort Worth, Texas 76102

Re: <u>Environmental Assessment for the Installation and Operation of Nine Remote Video Surveillance Systems in the Tucson Sector, Cochise County, Arizona</u>

Dear McGregor:

This letter is submitted on behalf of the Border Action Network (BAN), formerly the Southwest Alliance to Resist Militarization (SWARM). BAN is in receipt of the above referenced document and appreciates your consideration of the following comments.

The EA fails to meet the requirements of NEPA.

NEPA is designed to ensure that agencies make informed decisions. Environmental assessments and impact statements are tools to inform the public, as well as decisionmakers, as to possible consequences of major federal actions. These documents are meant to shape decisions by exploring all practical and reasonable alternatives and thoroughly investigating impacts of those alternatives. Environmental documents released by the INS frequently do not meet these objectives. Rather, they consistently show that decisions are made prior to the issuance of the EA or EIS and the documents are tailored to support that decision. Listed below are deficiencies within the above-referenced EA.

- This EA does not explore all reasonable alternatives. Although two alternatives, other than the "No Action" and "Proposed Alternative," are mentioned, they are quickly dismissed without full exploration of their reasonableness.
- This EA does not adequately address the impacts of connected actions. Although the EA identifies the RVS systems, road improvements and powerlines as parts of the proposal, the EA only addresses impacts from the RVS systems.
- Although the EA claims that public opinion was one of the criteria in determining the location of
 the proposed RVS sites, it does not show how this opinion was obtained. There is no evidence of a
 scoping process for the EA, nor have hearings been held to address this proposal.
- Cumulative impacts are not discussed. The EA identifies past, present, and future projects, but does not discuss the impacts that these projects, as well as other projects in the area, cumulatively have on the human environment.
- The EA does not address impacts on the environment from an increased presence of Border Patrol in the RVS areas. If the systems will detect migrants as the EA suggests and the Border Patrol will respond to apprehend them, then it is logical to infer that the Border Patrol will be traversing the same desert areas as the migrants. Why is this not addressed?

The EA fails to show results of surveys and how conclusions are reached.

- On page 2-5, the EA states, "Powerline ROWs were surveyed for sensitive biological and cultural resources in anticipation of power pole installation. Therefore, the installation of power poles will not be discussed further." How can the public provide informed comments on this part of the project if the details and results of the surveys are not shared? How can the public know if impacts from the ROWs are anticipated to be major, moderate, minor, or negligible?
- This EA and others in the past consistently assert that construction activities along the border such as this deter illegal immigration, yet cites no authority for this statement. What studies exist to show this point to be true?
- The EA asserts that no long-term significant impacts have occurred from past construction projects. What studies exist to show this point to be true?
- The EA says that surveys for protected species for all 10 RVS sites were done over a one week period, and that the surveys showed that protected species do not exist in those areas. Surveys over such a short time period cannot accurately show whether a species exists in an area as every species exhibits different behaviors over a period of one day, one month, or a whole year. Furthermore, the surveys do not appear to cover the areas that will be affected by road construction and installation of power poles.
- The BLM Plateau Site is located within the San Pedro Riparian National Conservation Area, in which you can find the following protected species: Southwestern Willow Flycatcher, Mexican Spotted Owl, Sonoran Tiger Salamander, Chiricahua Leopard Frog, Huachuca Water Umbel, and Canelo Hills Ladies' Tresses. Why are these species not discussed in more detail? Where is the evidence that U.S. Fish and Wildlife Services have been consulted?
- On page 3-46, the EA states, "Site AZ FF:9:85 has been determined to be not eligible for listing in the NRHP under any criteria." Who made this determination?
- The EA determines that archaeological sites will not be affected based on surveys done within a three-day period. This does not seem sufficient time to determine the existence of such sites. It then mentions that 25 archeological sites are located within one mile of RVS sites, but assumes that these will not be affected without considering the effects of road construction and powerpole installation.

The EA makes inconsistent and contradictory statements.

- The EA describes the proposed alternative as including 9 RVS sites and one alternative site. Yet, in the letters included in the appendix, the number of sites are stated to be 25 and 27.
- The EA states that negligible impacts to the environment will occur by installing the RVS systems because the sites are already disturbed and little vegetation and no wildlife exist there. However, the EA then states that the systems are necessary to protect the vegetation and wildlife in those same areas from illegal traffic. If the areas are already degraded, what is there to protect?
- On page 3-24, the EA states, "these sites [Montezuma Ranch] are previously disturbed and do not contain suitable habitat for the Mexican Spotted Owl." How can this be when the EA also states that the sites fall within an area designated as critical habitat for the species?

Thank you in advance for your careful and serious consideration of these comments.

Sincerely,

Bryn Jones Board Member

Border Action Network

TO: 18178866499





United States Department of the Interior

NATIONAL PARK SERVICE

Coronado National Memorial 4101 E. Montezuma Canyon Road Hereford, Arizona 85615

L7619 (RVS)

November 15, 2002

Mr. Charles McGregor U.S. Army Corps of Engineers Environmental Resources Branch, Room 3A14 P.O. Box 17300 Fort Worth, Texas 76012-0300

Dear Mr. McGregor.

The National Park Service, Coronado National Memorial, has completed our review of the Environmental Assessment (EA) for the installation and operation of a Remote Video Surveillance camera. We are pleased with the draft EA developed to date and are providing a few comments to assist in better defining the proposed action and addressing expected resource impacts at Coronado National Memorial.

When we accepted cooperating agency status we requested that the final EA be accompanied by a separate FONSI or appropriate decision document for each agency. We also stated that when each agency's FONSI (if warranted) had been signed, we would issue a 5-year Special Use Permit for the construction, operation and maintenance of the camera. We would make the permit renewable for additional five-year periods upon mutual agreement of both parties. As this EA moves forward we are still committed to completing these tasks.

Please send us four copies of the final EA for our review when it is released to the public. We will also need them to be able to address any comments we might receive during the public review period and to ensure that the EA conforms to the standards set forth in National Park Service Director's Order 12. We provided a copy of these standards to your contractor, Gulf South.

As of December 15, 2002, your point of contact for the project will be Mr. Dale Thompson, the new Superintendent of Coronado National Memorial. Until the Superintendent arrives, please direct any questions or information needs you may have to Barbara Alberti at (520) 366-5515, ext.30.

We appreciate your patience during this transition period and look forward to working with you on the remainder of this project.

Sincerely.

Ken McMullen Acting Superintendent

Dale Thompson, Organ Pipe Cactus NM CC:

MCM, DO

Comments on Draft Environmental Assessment The Installation and Operation of Nine Remote Video Surveillance Systems in the Tucson Sector, Cochise County, Arizona November 15, 2002

General Comments:

The overall project description, the affected environment, and assessment of affects are well done and require little change. We also understand and encourage the continuation of the project and look forward to accomplishing the project in the scheduled timeframes.

Include NPS authorities (1916 Organic Act; Redwood Act; etc.) in Authorities section.

You may consider reducing the number and frequency of government acronyms in the text of the document. There are many.

Visual impacts -Adverse impacts to the viewsheds is a primary concern of the National Park Service. We are sensitive to the visual intrusions of disturbance and manmade facilities that are located within the memorial and consider all mitigation measures as very important to the success of the final product. Therefore, we need more information on land restoration measures, type of visual mitigation to be implemented at the video location, and how the construction of a pad, fence and camera equipment is to be mitigated or screened from public views. We recommend several methods and ideas to accomplish this in the following specific comments.

Impact Analysis - The impact analysis appears to be somewhat biased in terms of describing the negative effects of the No Action Alternative in comparison to the beneficial effects of the Propose Action. We recommend that the final EA more accurately disclose the impacts of both alternatives in a less-opinionated manner to allow for an unbiased interpretation by the public. Please see below for specific comments.

Mitigation Measures - The document should include all appropriate mitigation measures into the proposed action wherever possible. We can help with this and we provide several important examples in the following specific comments. Some initial suggestions, for the Montezurna Ranch location for example, are replacement of the vegetation (seeding or transplanting) that is removed, and subsequent reseeding of the disturbed areas to protect the soil and initiate restoration of the site. It makes sense to reduce the size of the impacted area to reduce the effort needed to restore the disturbance, so a reduction in the overall area to be fenced is suggested. There will be a requirement to water the area during construction to reduce fugitive dust emissions, and minimize impacts and land disturbance along the access road and in the work area. Impacts to the visitor should also be improved as there are NPS requirements to address the projects affects on the visitor experience while the public is recreating within the park. An 80-foot tall pole needs to be "hidden" as much as possible to not interfere with wildlife viewing, for example.

Project Maintenance needs - There is little discussion of the maintenance needs for this facility. What amount of maintenance is required for these type facilities? How many trips

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per month, number and size of trucks and equipment to be used, etc. What happens when the camera detects traffic from across the border? What is a likely scenario for this event, and what are possible impacts to the resources of the park from this event? Are there risks to visitors from such an event? Is the site at Coronado NM to receive a propane generator? If so it needs to be discussed, described and located in the proposed action. A "Site Plan" is requested (dimensions of footprint) for the facility within the park to help with the mental picture of the proposed project.

Specific Comments:

Page 2-4 - 2-6: No description of the construction techniques, equipment, work schedule, or maintenance needs is provided. What is the power source to be used/preferred?

Page 2-13: There is a recognized "Cultural Landscape" for the Montezuma Ranch that should be described and maintained.

Page 3-3 - 3-5: There is some inconsistency in the naming of biotic/vegetative communities in text compared to Figure 3-1. Also, in Unique and Sensitive Areas, Montezuma Ranch is described as having spectacular views, etc., while in Section 3.9 Aesthetics describes this same area as being "previously disturbed" with no reference to the viewshed or historic landscape. The latter is an example of the "biased" writing we talked about in the General Comments section above.

Page 3-14 - 3-15: Removal of the Italian Cypress trees is mentioned, but no assessment of impacts on the cultural landscape is presented.

Page 3-18, last para.: Please change "confirmed sighting" to "unconfirmed" sighting of jaguarundi.

Same page: The defineation of the proposed project site is not provided, and the statements of the project area "being out of lepto range" and "no cacti observed in or near the project corridor" is incorrect. Please contact Barbara Alberti for correct surface coverage.

Same page: Use of "agave" and "century plant" in the same paragraph is confusing. Please use "agave" for clarification.

Page 3-25: If the project area is listed as 234,000 acres and includes 31,000 acres of USFS and DOD lands, it will include "lepto" range and "agaves."

Pg. 3-27: Change "Vasques" to "Vasquez."

Same pg.: 6,575 feet elevation is for Montezuma Pass; The Arizona Trail does not begin here, it only "passes" by Montezuma Pass, actually ending at the Mexican border.

Pg. 3-28, Fig. 3-9: Miller Peak Wilderness is USDA Forest Service land, not BLM land.

Pg. 3-30, last para of 3.5: "Visual impacts far outweigh" statement is another example of "biased" writing of an alternative. Please remove subjectivity and simply state the impact level associated with the action.

Pg. 3-39, Noise: There is noise associated with the operation of the camera and propane generator (if used) that needs to be addressed. What level of noise is expected, and at what distance can one hear this noise? Is there a decibel rating for the equipment? If so, please provide with context of use. There is also vehicle noise (park vehicles, existing patrols, visitors, etc.) and natural sounds from existing uses, wind, etc. that set background noise levels that need to be discussed. This thought should also be carried over into the "cumulative" impacts section for analysis.

Pg. 3-44: Correct spelling is "Zaleski"

Pg. 3-50, Future INS projects: Does this list include all proposals (is it current)? Does this list include the 300 feet of new road and fence and a requested ROW?

Page 5-4: University of Arizona reference is missing "Bat".

A-5 "Sanborn's" long-nosed bat should be "Lesser long-nosed bat."